THE

SOUTHERN AGRICULTURIST.

AUGUST, 1835.

PART I.

ORIGINAL COMMUNICATIONS.

On the Use of "Warping."

In the flat lands of the Southern States, and especially where the culture of rice directs attention to such localities, we are familiar with the rapid accession made to the soil, of spots, over which the tide is freely admitted. No accurate observations have been preserved, of the extent and value of the deposits so made, nor have any practices in the management of land, been generally adopted to render them available.

Running water deposits sand, retaining the argillaceous, calcareous, and vegetable detritus, together with the neutral salts and other fertilizing substances it may have dissolved. Still water spreads over the soil on which it rests, the spoils with which it comes charged. The rush of waters, which fall during heavy rains, and find their way to the sea, strips exposed situations of their mould, and transfers to the greatest distance, the most fertilizing ingredients. Hence, the deposits made in our rivers, within the reach of the tide, when repose is first afforded to the drainage of the interior country, are freighted with abundance. This reflection will justify some attention to the use, which may be derived from the habitual overflow of the tides, and from the occasional inundations occuring above the influence of the tides.

It was a matter of surprise to the celebrated Arthur Young, that the inhabitants of Lincoln and the adjacent territory, had long invented modes of using the alluvions of their rivers and of the sea, as expedients for the improvement or restoration of their fens and marshes. Similarity of circumstances had taught them the same husbandry, and they were followers without being imitators of the highly artificial methods used in Italy. In England, arrangements were made by embanking land and erecting sluices, to admit turbid water upon their lowlands, to retain it until it had parted with the ingredients held in suspense, and then to discharge it; repeating the process as long as was required for the accomplishment of the object in view, that being sometimes to increase the productiveness, and at others, to raise the level of the ground. This practice was called "*Warping*," and it is asserted, that the deposit in one summer was on some of the English rivers from six to sixteen inches thick, and in hollows, from two to four feet, so as to make the surface level; it was sometimes insisted, that each deposit should be permitted to become dry and encrust, before the admission of another flow of water.

The depth of the deposit, accustomed as we are to muddy rivers, startles us. The deposit of a single tide is stated at from one-eighth of an inch to one inch on the Humber, depending in some measure on the depth of the flow, the deeper the better. In one instance fourteen inches were warped in three years, this case approaches more nearly to our own expectation of the result. At the mouth of the Humber, *four yards* were accumulated upon reclaimed sands, though the statement is inexact, there is enough in it to shew that the accumulation was enormous, or the observer very much in error; we suspect the latter, and it reminds us of the statement of a friend, whose rice-field bank upon Cooper-river was broken, and remained open for some weeks, he traced the deposit throughout the field, measuring the crust, which scaled off after it became dry, and astonished us by his account of the quantity of sediment carried in by the tide; we supposed he had been led into error in this way, the rush of the tide through the breach had dissolved and carried with it much of the soil at that spot, and this had been surrendered as soon as greater expansion permitted an approach to rest, so that the soil was in fact, perhaps,

transferred from one part of the field to another. But a comparison with the English accounts would seem to shew that this was a moderate estimate.

Warping in Lincoln is usual once in seven years, that is to say, one whole summer. Oats proved the best crop to begin with upon warped lands, especially where the warp was salt. Beans, wheat, flax, potatoes, white clover, and hay seeds succeeded, and all rewarded the cultivator with great returns—barley failed by growing too rankly. The water was admitted through sluices, hatches, cloughs or tunnels, which answer to our floodgates and trunks, but constructed and secured with greater care and expense. The first instance of its use preceded the second fifty years, and it took forty years more to make the practice general.

In Italy, the same practice was previously known by the name of "*Colmata.*" Torricelli proposed the adoption of the system which has become universal there, the only difference in the details from that used in England seems to be, that as the rivers are not tide waters, but mountain streams, provision is made to introduce the water by canals, extending in some places four or five miles from higher points in the rivers to one extremity of the land, and to permit its escape as slowly as possible, by drains from the other end, and so on, in a continued stream. This is not to be confounded, although frequently combined with their most costly, elaborate, and skillful arrangements for *irrigation.*

The first effect was a prodigious fertility added to the soil, but in the course of time, the rivers being generally embanked, were forced to deposit within their banks, the sand and gravel and fragments from the mountains, brought down abundantly by them. Every inundation raised somewhat the bed of the stream. Art kept pace with nature, by constant addition to the banks, till at length the Po runs over a bed elevated thirty feet above the surrounding country, and every family is furnished with a boat, in which to embark in case of casualty. The Colmata cannot cure such an evil, it cannot raise the wide valley above the bed of the Po; but in some situations is still resorted to as an expedient for raising the surface, and making it practicable for culture when too low.

It is respectfully suggested to our Agricultural Societies in each District and Parish, to institute observations upon

the depth of the sediment in our rivers during droughts, and in the rainy seasons.

To examine and record any cases in which warping has been beneficially resorted to, for fertilizing the soil, and especially for raising the surface.

To inquire whether the morass of Savannah river, and other tracts similarly situated, may not be improved by the aid of time, at an expense consistent with prudence.

It will be interesting to compare the husbandry of the Nile and of Bengal with that of the alluvial districts of Europe, and with our own, and we hope that such comparisons will result in bringing to us contributions from every agricultural association, within the circuit of our periodical. CONDUCTOR.

General Observations on Agricultural Pursuits, and some remedies hinted at.

"Woodlands, (Ala.) 1835.

To the Editor of the Southern Agriculturist.

Dear Sir,—Last month I offered a suggestion, that "the application of any product of the planter's industry, and a strict observance of a well timed system of economy, decide in a great degree, the relative value to him, of the result of his labour." Viewing this sentiment, as a truth of primary importance to us all, I have been induced, from feeling occasionally its truth, to observe and reflect on the "wide spread influence" produced on the prosperity and comfort of many, even good men, from a neglect of its observance. The land may be good, well manured—judicious tending the crop—much laudible energy and industry used, and a "heavy crop" made—still like, in making an ox-bow, every thing depends on the "turn" it takes, after all is done. As regards reaping comfort, or advantage from the previous labour—a striking "commentary on the text" is frequently presented to me by two of my good neighbours, and which case, I shall offer to your intelligent readers for their consideration. The instances, I am satisfied, are not rare.

Those men are almost in similar circumstances, with a heavy charge of the "poor man's wealth." As regards property, they have each a quarter section of good land; about thirty acres cleared, they both enjoy good health, much capacity for bodily labour, and each has two children, capable of assisting them in their agricultural operations.

Each of those small planters works well, manages his crop judiciously, generally producing excellent returns for their labour, and they have received and enjoy amongst their neighbours, the reputation of industrious men and good citizens. As regards managing the things of time, and accumulating, I have discovered a singular difference in their disposition and views, and have been induced to observe the operation of this difference, somewhat closely, believing that it affords a fair case to decide on the truth of my previously adopted theory.

Amongst a great variety of striking circumstances, I have observed, that the one who goes amongst his neighbours, by the familiar title of "*Uncle John*," has uniformly every spring two stacks of excellent fodder to sell. "*Colonel Billy*," as uniformly, is harrassed every spring, for the want of a stack, and his good old plough horse suffers severely from this want. Hearing this complaint from the "*Colonel*," so repeatedly, I was induced to ascertain the way in which it was brought about, and how the three stacks put up in the summer, were disposed of, for he never failed to pull and cure a full share "to the hand"—rather more than "*Uncle John*." On investigating the case, in a way of delicate inquiry and observation, I discovered that the "*Colonel*" has been uniformly in the practice of having a "shucking," while Madam embraces the opportunity to get a "quilt taken down," a dance, a good deal of whiskey, much "frolic and fun," and upon the whole, it becomes a periodical row, followed by two or three days of head-ache, sick stomach, indisposition to labour, and, indeed, incapacity. Several days elapse before the crib can be prepared, and the crop housed, for no body is able or disposed to go to work next morning after the "shucking." The shucks lay in one pile, and the corn in another; the sick head-ache still continues, unless an invitation to the "Major's shucking' and dance, and quilting relieves it for a night, but not for the next day. The corn is, however, cribbed, but the shucks lay waiting for the rail-pen to be built; day after day passes, rain after rain falls on them, cow after cow, and hog after hog passes over them, and at last comes, "indeed they are so much spoiled, owing to accident, that they are not now worth putting into a pen." "But thank fortune," replies the Colonel, to one of his more economical neighbours, who was remonstrating with him

on the carelessness of losing such a quantity of fine winter provision for his cattle—"Thank fortune, we have made a fine chance of fodder." But this last remark was made while the season was yet mild, and the cattle done "pretty well in the woods." The cold, chilling rainy days and nights of November and December come on, and "nothing for the milk cows," the "children can't do without milk," "it won't do to let the cows suffer," "they must have some fodder," "it was a pity old man that these shucks were lost." The pleasures of the little row are long since forgotten, but the loss of the shucks, one of its consequences, begins to be remembered. "The cows must have some fodder, nothing else for them," "and the calves are perishing, it won't do old man to let them perish, they must get a little fodder too, to save them." The steers were suffering—"the good pair of steers that haul wood and rails, the crop in, I don't know what we could do without them, they must get a bundle of fodder," "it would be inhuman to let them suffer while we have it." All wise and cogent reflections, but only sadly out of time and season. Had they been made, just before the shucking and row that followed, as a necessary consequence, a large pen of shucks, might, and no doubt would have been now on hand. "Bleak Boreas" don't choose, however, to wait upon our folly, or want of consideration—the winter was long and hard. By ploughing time, two stacks were gone, and one broke into. "Well, I must buy a stack of fodder"—it is put off from day to day, other business pressing with the opening of spring, as is usual. At last, "Dobbin," is mounted, to "go and look for fodder," but "it is too high"—loud complaints, vexation, and Dobbin suffers—time is lost running about—hard work for "Dobbin," approaching fast—he gets his corn, and is nightly turned out to "pick grass" after a hard day's ploughing. Dobbin frequently don't choose to come up early, and the plough starts one or two hours by sun; the Colonel walks himself "to death," hunting him all the morning, and trying to make a good day's work by the night, is "tired to death," weary, and vexed, having to turn Dobbin out again, he looses the cheerfulness of a father and a husband, and tumbles into bed like a log, fretful, and fretting at his misfortune of having no "ruffage for his plough horse." He concludes, "it will never do, to let the plough stand still," and again goes to "hunting

fodder." After consuming two days, so extremely valuable to him, he buys, at a double price, and hauls it home. Here a hole is made in his little cotton crop. So much for the shucking, the quilting, the dance, the row, and the shucks being lost. Nor does "*Colonel Billy's*" misfortunes stop here.

The Colonel, early in life, conceived a strong military *penchant*, and soon determined to get, if possible, into a situation, to be ready to "fight his country's battles," with renown to himself, and glory to his country, should its enemies ever "invade its peaceful shores." From rank to rank he rose, until he honourably was elected "Colonel of the 3d Regiment;" but notwithstanding the glitter of the epauletts, and the imposing size of his sword, the mass of his acquaintance could never admit or apply any other title to him than the familiar one of "*Colonel Billy*," for they never failed to add, he was "a good soul." This military advancement, however, brings the Colonel, although a time of profound peace, and no earthly prospect of hostilities, "a power of military business to attend to," and with it a great many military visitants, and who occasionally fight some excellent battles, over a glass of excellent toddy. "Scott's military tactics," and "Vauban's Art of War," with an old family Bible, the "Pilgrim's Progress," and "Tom Thumb," with the children's Spelling book, constitute the Colonel's library; the two first being read to him, in a scholarlike manner, by the schoolmaster of the neighbourhood, who visits him every Friday night for that and similar purposes. The consequence, however, amongst others, is, that the "corn goes mighty fast" —and the Colonel generally, becomes the purchaser late in the season; and this makes another vent in his little cotton crop. At this he frets and oftens makes loud complaints about his "bad luck," and to add to the Colonel's mortification, you sometimes see a constable's horse hitched at his gate.

"*Uncle John*," never has any shucking, no quilting, dancing or rowing. His corn is put up in the shuck, the whole shuck, no slip-shuck business with him; as he uses it, the corn is shucked; and the shucks laid carefully in one apartment of his crib. The cold, rainy, chilling nights of November and December, come to him too. The milk-cow lows, as she approaches his gate. She is immediately put into a dry sheltered pen, and sufficiently

protected from the piercing wind, and "pelting of the pitiless storm," and in a large trough, a fine basket full of fresh shucks, sprinkled with salt and water, is placed, pulled to pieces, for "*Brownie*" and "*Lady*," &c., and this injunction, added to the shucks, often, and again, by the modest pious matron, who it was John's good fortune and good sense to have secured, "think of the cow my dear children, and be good to her, for she it is, that gives you sweet milk"—"pull her shucks to pieces, that she may soon fill herself, and lay down to rest." The infant drinks in benevolence, feels its humanity, roused and gratefully returns good for good. Here is the impression stamped by a mother, that no time can efface those lessons that form a Washington! John smiles approbation, and inwardly congratulates himself on the possession of such a partner for his bosom—such a mother for his offspring—he feels a full glow of the most refined happiness. The calves, they have "some of the nicest of the shucks, my children, and some oat straw from the barn." The "good steers," they too are well supplied with the roughest of the shuck, and some tops that were saved and laid by for them. They have their warm sheltered apartment. Providing such little sources of comfort for his animals, occupies the time that the Colonel is found settling military affairs, or going to the "store" on Saturdays. John throws his corn from the carriage into the crib; economy makes it hold out; Dobbin has his reserve of fodder laid up in the "little stable loft" for winter use, and until ploughing time. The stacks stand untouched; a small neat stack of oats to be cut occasionally in the sheaf, aids Dobbin with his allowance of corn, who eats his meal in a warm stable, and lays down to a refreshing rest, "after a hard day's ploughing or riding." John sells his two stacks, when such as the Colonel is out on the hunt, and sold it is. The proceeds go to Mobile and lays in his sugar and coffee, at a low price. The proceeds of the little cotton crop go to lay up a piece of good land for a child. John frequently congratulates himself on being settled in a country, where it is "so easy to live and get along," and in speaking of him, his neighbours say, "he is a prudent good man." Your readers will apply the sentiment with which I set out, as has been frequently done by

CINCINNATUS.

On the Culture of Sea-Island Cotton.

To the Editor of the Southern Agriculturist.

Dear Sir,—I herewith present for publication the following article, which was written in the Spring of 1826, by Mr. William Henry Capers, late of Daniel's Island; in reply to a letter received from Arnoldus Vanderhorst, Esq., late of Christ Church Parish, soliciting information as to the practice he adopted in the cultivation of Sea-island Cotton. The manuscript has been in my possession from the period above referred to, until the present moment; and, although, several private copies have been taken of it by esteemed friends, still no further publicity ever has been contemplated. In compliance, however, with the gratifying request of his acquaintance, I offer the following with diffidence; as the observations of a *Young Planter*, whose judgment and experience, are acknowledged by himself to have been both immature and circumscribed. The alternations of season, having caused so vital and palpable an effect, on the constitution and condition of the plant since the following remarks were written, (upwards of 9 years ago); that I shall crave your permission to append in the form of annotation, some additional views connected with the subject, and

Remain, respectfully, your obd't. serv't.

S. R. S.

Reply of Mr. William H. Capers, to Mr. Arnoldus Vanderhorst, on the subjects connected with the culture of Black Seed or Sea-Island Cotton; to which are added Notes, by S. R. S.

"Farmington, Daniel's Island, March 16, 1826.

Dear Sir,—Agreeably to your friendly and flattering request, I now respectfully place you in possession of all the information in my power, relative to the culture and cleaning of Black-seed Cotton, according to our practice; which, perhaps, varies from that of many planters, on account of the difference of soil. As much depends on the preparation of the land about to be planted, and as I regard it of *primary and paramount importance;* I have commenced with that, (supposing the land to be cleared);

and have divided the subject into heads, according to the different processes; the explanation of which, whilst I entirely distrust my ability to render satisfactory, I present for your liberal indulgence and acceptance.

With sentiments of esteem, I remain, very respectfully, your obedient servant,

WILLIAM HENRY CAPERS.

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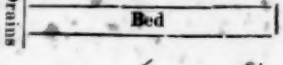
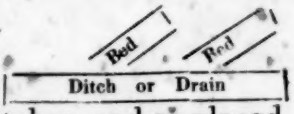
PREPARATION OF LAND.

In preparing a field where the soil is close, moist and cold, and the land low, it is all important to have it well drained: ditches must, therefore, be sunk in the most appropriate places that the water may run off, and be discharged during heavy rains; and half and quarter acre drains cut leading to them, and even at shorter distances if requisite, to prevent the water from resting superficially on the land, and to keep it as dry as possible. It should be first laid out in tasks of 105 feet square, and tracked so as that the beds will run to the best advantage, and in such directions, that the water will flow with the greatest facility into the drains; which should be cut at right angles or crosswise with the beds, thus: 

or if the land be hilly; on the elevation, the beds to run diagonally with the* ditch or drain thus:— 

The tasks should be marked off by stakes, and so placed, as to range in line according with the squares of acres and triangles: and instead of the small stakes which are now generally used, it is the better plan to use small posts, about the thickness of the arm, of chinquapin (*Castanea*

* The absolute importance of Ditching in soils of the character above alluded to, is unquestionable. The chief point of difference of opinion is, how to *graduate advantageously the diameter* of the ditches. Some affirm, that it is best to make them wide and shallow, inasmuch, as that where there is compass and width, the water will pass off more rapidly. Others maintain a contrary opinion, and declare that the only true system of ditching is to dig deeply and narrowly. This goes no further than merely joining issue on the subject, however, and leaves the question still debateable and hypothetical. With due deference to all other opinions, nevertheless, I beg to add, that the only rule which can be laid down as immutable *necessity establishes.* It is this, that no land ever can be well drained (whether the ditches be either wide and shallow, or deep and narrow) unless the vent for the water be *so great* as *to prevent* the least re-admission of it to the surface, by absorption from the ditch itself. A word more—all ditches should be convex or eliptical at the angles. S. R. S.

pumela) or cedar, cut about three feet long, and driven into the ground *a foot*, where they will remain sound and stationary for years, and over which your cattle, if placed in the field, can pass without levelling, whereby the labour and loss of time of every year's splitting new stakes, and running out the land afresh are profitably saved. In new ground where the land is strong, the beds should be placed at the distance of five feet apart, making twenty-one beds to the task; and in old land twenty-two beds. The number of beds in a task, however, depend in a measure on the manner in which the land is tracked and listed; for it sometimes happens, although the tasks may have been properly laid out, there will be more beds in one than another; owing to the track not having been run straight, and the negroes in listing getting out of the track, and hoeing more on one side than the other, will encroach on the distance of the next bed, and in this manner either throw out one, or introduce an additional bed. This error should be particularly guarded against, in a field of new ground, as it is banked without listing, (there being always a sufficient quantity of vegetable manure on the surface of the land, to render it unnecessary to list for the first year's planting,) and should it then occur, when the field is again planted, no alteration can be well made, without leveling the whole task in which the mistake has occurred, as the list for the new bed is formed by hoeing the dirt from the sides of the old beds into the alleys, there will consequently be as many beds as at first. Old land, (particularly after laying out one or two years) requires an early and heavy list, if the growth of grass and fennel is large, in order that it may be rotted before the seed is planted. In stiff close land, it is very advantageous to list in the cotton stalks when a field is planted two years in succession, for they not only make a good manure, but loosen the earth so that the water will pass off from the beds into the alleys, and from thence to the drains. All vegetable substances that are easily decomposed, make good manure for cotton, particularly grasses of all kinds, *except the broom grass*, which is almost indestructible, and will not rot for a length of time; and as soon as the tap-root reaches it, the end will die, for it cannot pass through this grass, and the sustenance the plant would otherwise have received from it, is checked, as it is nourished only by the succour roots, it

will, therefore, look sickly, the growth be small and unproductive.

I am confident of this from actual experiment, and always prefer burning a field in which there is any of this species of grass, although it is against the general rule, and is said to injure lands; but I do not myself believe that it does, otherwise it would not be an invariable practice to burn the under brush, &c. in cleaning new ground, and likewise the stumps and logs, in old fields while listing. I do not think that fire can injure the ground, and presume, that those who assert that it is injurious, mean to imply, that the growth of other grass is also consumed, and consequently, is lost in listing; but the ashes produced from the broom-grass, and other vegetable substances which are consumed by the fire, remain and make an excellent manure. I am the more disposed to believe this an erroneous prejudice from the circumstance of having burned a part of a field, (which was older and had been much oftener planted than the other portion of it) on which there was a thick growth of broom-grass, and finding it equally productive, the stalks as high and generally larger than any other part of the field, the circumference of some being of unusual dimensions. If, however, my opinion is *even incorrect, I would rather depend* on the *ashes as manure*, to make a crop, *than permit this grass to be listed* in, being convinced from experience, that injurious effects are sustained from it. Although well aware of the necessity of listing land early, when in the situation before mentioned, I would advise that it be not *too early* ready for the reception of the seed; that is to say, that your work be so timed, that as soon as you have finished banking or bedding, let it be *then necessary to plant*. This, however, is a point in which I may, perhaps, differ from many planters, and would not presume to sufficient experience to decide the question; what I shall advance in support of this opinion, I think a good reason for entertaining it. If the land be ready for the seed sometime before the full period of planting, the grass will naturally spring up on the beds, and in a very short time after the cotton comes up, and is quite young and tender, the grass will oblige you to hoe it, to the manifest injury of the cotton; for the negroes are very apt to hoe so near it, that they not only bruise it, but sometimes cut it entirely down, particularly those not accustomed to this

kind of work; and while so young almost the slightest touch of the hoe will kill it, or produce what is called the *sore-shin*, which never fails to render the plant unhealthy: whereas, if no sooner than the land is ready, it is time to plant: before the grass requires hoeing, the cotton will be sufficiently strong to *bear the first hoeing*. Indeed, I find it *saves one entire hoeing*. The beds should be made large and the earth well broken up, and as many of the roots, &c. thrown out as possible, for they injure the cotton while hoeing; *rakes** are very useful for this purpose, but they must be used in the alleys only, and margin of the beds; a quarter of an acre is the task both in listing and banking old land; in new ground two hands bed one task.

PLANTING.

The usual time for planting with us, is from about the 25th of March to the 15th of April, inclusive; however, much attention must be paid to the season, and a proper allowance made according to the temperature of it.†

* Experiment has so fully demonstrated the great assistance derived from this little implement, that it may not inappropriately be termed the *cotton harrow*. The *removal* from the cotton plant of *any part of the soil*, I always esteem *a positive loss*, and I know of none other so efficiently calculated to save your field all that portion of earth which attaches to the roots generally, and in which the grasses are imbedded. Any planter fond of what is called "nice work," need only to try it for one season, and I feel assured that he will be amply compensated by the reward of a field having no grass buried up, by having likewise his land thoroughly pulverized; (a matter by the way of vital importance) and last, though not least, by having it in his power, whilst supervising to "*enjoy the work of his hands*."

S R. S.

† This engrossing subject concerning which a greater diversity of opinion exists than any other, has always arrested the notice of the planter. Many plant unto this day upon a particular day of the month, as did their ancestors before them—many wait patiently, until the year has grown too old to play tricks with them, and many "nothing fearing, nothing doubting" run all risks. In every instance sufficient of a crop must have been derived to warrant the repetition of the experiment, else we should have had established long since *some standard period* for planting. The very remarkable vicissitudes and influences of the spring season, for the last five years, however, have tended somewhat to harmonize conflicting opinions on this great topic. Let us illustrate this remark by an appeal to facts. Is it not notorious, that more cotton-seed has been *used and destroyed* in *planting*, *supplying*, and *replanting*, between the early part of March and the middle of April, from '31 to '35, than was ever before known? From '31 to '35, has there not been annually greater difficulty in "setting a crop," and greater frustration of expectation, than for years antecedently? And what is the response to be made to these interrogatories. What else, but that whilst nature was working remarkable changes, public opinion was still inflexible and dubious. Retaining prepos-

The best method of planting, is to divide your hands into a certain number of trenchers, (by some called drillers) planters, and coverers. The trenchers open the holes for the reception of the seed, each taking a task in a line, and are followed by the planters, who throw in a handful* (or a lesser quantity) of seed in each hole, and it is then covered by either the foot or hoe. The number of holes in a bed depend on the strength of the land, and must be graduated accordingly. Where it is very strong, forty to forty-five are quite sufficient; tolerably strong, fifty to sixty; rather weak and poor, even as many as 80. The holes, therefore, are not placed at regular distances throughout a field. It is not necessary to make the holes deep, unless you plant at a venture. There is no task in planting, but as much as possible finished throughout the day. The seed will be a longer or shorter time in coming up, as the season may be; and for the same reason the cotton will be sooner or later taking the change. It depends, however, somewhat on the seed itself. Southern seed, for instance, (St. Simons) is always with us much later the first year's planting than afterwards. If there comes a severe frost after the seed is planted, and there is no appearance of its sprouting, fears may be entertained of its rotting; this can easily be discovered by examining the holes, and if it is the case, it will be necessary to supply immediately. The best method of doing this is to make new holes between the old. If, however, the first

sessions for old-time practices, many refused to win any thing by venturing at all, preferring, with Cowley, that

"If a new poverty grows out of store,
The old plain way, ye Gods! let me be poor."

Late planting, (say from the 10th to the 20th of April) if not the *old way*, is certainly becoming the *fashionable*, if not likewise the *true* and *sure* way of seed and labour saving, of escaping also multiplied plantings, and accumulated anxiety. I recommend it from experiment, having for the last four years planted at least twenty days later; and have had the cotton equally as forward in the forming, blossoming, podding and opening as before. S. R. S.

* Some persons plant altogether with a common clay pipe, instead of the hand. In late planting, when it is necessary to force up the seed, it no doubt is to be preferred, it being impossible for the negro, whose cunning is only equalled by his laziness, to escape detection, in subdividing the contents of the pipe, into the trenches; whereas, it is almost habitual with them, (as well as having an eye to hurrying over their work) *to break the quantity contained in the hand into two parts*, so as to save themselves from the *trouble* of renewing their drafts upon their seed-bags, piggins, or whatever else they carry it in.

S. R. S.

planting does eventually come up, although it may have been checked by the cold, and has a sickly appearance at the commencement, it is to be *preferred* to the *supply* which usually grows too rapidly, becomes spindling and unproductive; as it generally happens that it is late before you find it necessary to supply.

HOEING.

This should be at all times performed with much care and caution, to prevent the hoe from cutting or bruizing the cotton, which is a serious, if not a fatal injury to the plant. It should not be too soon commenced, after the cotton has come up, but a short time allowed it to gain strength. Six hoeings are usually considered sufficient, and even a less number no doubt is, in light loose soils, but in such lands as ours, there can be no general rule, owing to the moisture of them. The most effectual way of keeping clear and insuring the total eradication of grass, I believe to be, first, to go through the first hoeing, then haul up, (*i. e.* draw the earth up from the alleys on the beds) if the grass has not grown very rapidly, but if it has, *hoe and haul up the same day*, that is to say, instead of hoeing two tasks, hoe one, and haul it up. This process should be continued until the cotton has grown so high, and the branches spread out so much, that it would be injured by standing on one side of the beds and hoeing on the other; the negroes then stand in the alleys and *hoe side ways up*. The last hoeing is late, and is done to prevent the grass-seed, &c. mixing with the cotton when it begins to blow; this is in the alleys and lower part of the beds. It is necessary to be very careful in hauling up, to prevent any dirt being thrown on the cotton, as the weight of it presses it down. I find it a good plan to make the negroes, after having finished their tasks, go *through it and carefully remove the dirt*, if any, *about the plants*. The grass on the top of the beds and among the cotton, that cannot be cut with the hoe, should be *picked* with the hand, and all the grass collected with the rake and put on the stumps or logs, that the sun may kill it, or be consumed with fire, or removed from the field. I think this the best plan to adopt, and not to observe any particular rule as regards the number of hoeings, but to go on regularly, and as soon as you get through commence again. You cannot keep cotton too clean, and stirring the ground is of service to

it. *Remark*—When cotton takes the change, that is when the wood begins to form and the first leaves drop, it has a very unpromising and sickly appearance, and a person unacquainted with the nature of the plant, would suppose it was dying, but in a short time it puts forth with fresh vigour, and the pleasing prospect of a flourishing field renews their hopes. Half an acre, or two tasks, is the task in hoeing.

THINNING.

In plucking up the superfluous plants, and it requires much judgment in doing it, and there can be no particular time specified for it, as you must be governed by the season, and by the healthful state and growth of the cotton. It is, however, generally commenced on the second hoeing, and one-third taken out, on the third, one-half, and on the fourth, where it looks healthy and flourishing, to three, and where it appears not so promising, five are left. The last thinning* is to two, when the cotton is a little above knee high, unless the soil be too luxuriant when it is sometimes thinned to one. The best method of thinning is, to make each hand thin the tasks they hoe, in the two first, and afterwards to put any number of thinners to work, and let them go on regularly through, each doing six tasks. In poor land where the cotton grows neither thick nor high, three may be left to advantage, but where the land is very strong, if more than two stalks are left, it grows so thick it cannot well be picked. Topping also has this effect, and with us will not answer, and, I believe, is scarcely any where practised, except accompanied with some apprehension of injury.

PICKING

Is the gathering or harvesting of the cotton after it blows or opens sufficiently,† when it is taken from the pods with

* During this process, a favourable opportunity presents itself to cull from the field those stalks of cotton which spring from exceptionable seed. Such, for instance, as the Red eye, the Male, Bastard, &c. They exhibit themselves most distinctly at a late period of the year, say July, and are removed with most advantage, whilst engaged in the last thinning. S. R. S.

† There exists a great difference of opinion on this head. It is esteemed by many as a loss of time to pick, only except there be a "*fine blow*" as it is termed, others look to the old maxim "whatever is *saved* is so much *gained*," and, therefore, begin from the very offset by employing, if *only a single hand*, in taking in the cotton. Every man knows by experience, his own interest best, no doubt,

the hand. The negroes are each furnished with a picking bag and sheet, and when the bag is filled, it is emptied into the sheet which should be spread, where the sun may dry the cotton, (without baking it, as it is called.) The cotton must not be picked from the pods which have just began to burst, as they have not come to full maturity. Care should be taken that the pods and branches be not broken off, and that neither leaves nor pieces of the pods are picked in with it, as it gives a good deal of trouble in cleaning. There is no task allotted the negroes in picking, but they *pick diligently as much as they can*, from the time of going into the field, until a short time before dusk; and those accustomed to it, where the blow is very good, can pick 70 or 80lbs. and some even 100lbs. The sheets are each weighed separately, and the weight of the sheet deducted from the weight of each bundle; in order that a correct account of the cotton may be kept. If the cotton be wet by sudden showers of rain, while picking, it is not weighed until dried on the scaffold, and then weighed in bulk. After it is weighed, it is put in the cotton-house, but not packed in binns until dried on the scaffold, as serious accidents may ensue from self combustion. The negroes should not be sent into the field to pick until the sun has risen sufficiently high to dry the dew. After hard rains, one day should be allowed for drying, before again picking.

ASSORTING OR NUBBING

Is removing all the yellow cotton, pieces of leaf, and dirt of every description. To have this operation carefully and well performed, is the *grand secret* of cleaning cotton properly. It is the *first cleaning process* it goes through with, and the facility and despatch of all the suc-

and the most useful lessons are to be taken from this heedful instructor. The information which I have derived, however, on this point, leads me conclusively to the conviction, that it is better *to realize than to expect.*

Contingences of various kinds may occur to obstruct the gathering in, even after waiting for a "full blow of cotton." Sudden and heavy rains frequently interpose to prevent your continuing this work, and it is within the compass of probability, that erratic cattle may derive greater benefit from the exercise of your patience, than you would otherwise bestow upon them.

Again—if the sun be the destructive agent to cotton, which common belief establishes, it certainly is better to secure it by halves than to endanger the whole.

S. R. S.

ceeding processes, length and strength of the staple, depends in a great measure on it: for, if the cotton be free of all dirt, rotten seed, &c., it will gin easier, and be so clean as to require little handling in moting; too much of which destroys the staple. You must observe, tbat too much of the cream coloured cotton be not taken out, without it is so deep, that when mixed with clean, it appears stained, otherwise it will be too white, and a rich cream colour has always much effect in the sale. A large quantity of this prepared, should be kept ready on hand, so that, if possible, the gins may not be stopped after they have been set at work. The task in nubbing is 60lbs. The average weight after being cleaned, is from 35lbs. to 45lbs. if the cotton be much stained, if not, from 40lbs. to 50lbs.

WHIPPING.

This is a process of cleaning which has not long since been adopted, and is performed with a machine called a "*Whipper*," now much used; it opens and loosens the cotton, and shakes out of it a great quantity of dirt, leaves, &c. Many persons pass the cotton through the whipper *before* nubbing, but we always do it *after*, which I believe is the better plan. For if it is whipped before the *yellow cotton* is *taken out*, it is so *much mixed with the white*, that it renders the nubbing more difficult, and it cannot be too well done. After being whipped, the cotton is ready to be dried for ginning.

GINNING

Is the mechanical process of extracting the seed from the cotton, and requires much care and caution, as many injurious effects may arise from a want of it. The principal of which is fire, caused by the friction of the rollers and the velocity of the rotation of the wheels, by which they are sometimes ignited, and many instances have occurred by which serious losses have been sustained. All that is necessary to prevent this, is to keep the gins well oiled. The next is cracking seeds, which stains the cotton, and requires much handling to take them out in moting. But this is owing either to the cotton being damp, or some defect in the rollers; an attentive eye, therefore, must be constantly kept on them, and a proper choice made, of the stuff used for the purpose. The *red oak*, I believe, to be the best for *both rollers*, one of the *sap*

wood, the other of the *heart*. Some persons use pine and oak, but the *oak alone*, I think, preferable. If the weather be fine and the cotton perfectly dry, and the seed cracks in ginning, it is on account of the rollers either being both new and not smooth, or to splinters splitting off, if the first is the case, they must be taken out and scraped smooth, if the latter, they are unfit for use without, they will admit of planeing. Avoid, if possible, putting in two new rollers together, as it is difficult to prevent them from cracking seed. Cotton gins best in cold, clear, dry weather. The plan we adopt in ginning out our crop is to gin altogether at night, and avoid day ginning, as I find the cotton ginned at night much better done than the other; the cause of which, I believe to be, the difference of task, 7lbs. of clean cotton being the night task, 30lbs. that of the day, for full hands; and when they have the day task, from their desire of finishing early, they will not stop if cracking seed, without they are detected, and when cracked seed gets mixed with as much as 30lbs. it is very difficult to clean. I give the preference, therefore, to night ginning. If you are in a great hurry to get out your crop, you will be obliged to gin in the day, but as long as you are picking, I would advise you to gin at night. We also never gin in wet or damp weather. Should you gin in the day, (and the sun shines) the scaffold should be filled with cotton and taken from thence to the gins. If at night, as much as will be sufficient, must be put on the scaffold that day, as soon as the sun is warm, frequently turned and stirred about, and taken in a short time before sun down, put in the bags, and weighed, 21lbs. in each, exclusive of the weight of the bag. Early in the morning, (while ginning at night,) let each hand look over the cotton ginned the night before, and take out every thing like cracked seed, yellow cotton, &c. as it saves some trouble in moting. It is then weighed and put in the ginned cotton loft.

MOTING

Is the picking from the cotton with the fingers, all the stained cotton, cracked seed, visible specks, &c. and is done on a frame for the purpose of various constructions. Great care is necessary in this process, not to handle the cotton too much, particularly that it is not pulled or torn apart, otherwise the staple will be materially injured. The task in moting is 30lbs.

PACKING.

This is the last process the cotton goes through with, and is putting it into bags with the hands and an iron pestle: the bag is laced round a hoop and let through a hole in the packing loft, the packer gets into it and receives the cotton from two hands, who look over it before it is thrown into the bag, and then packs it down with the pestle. It is necessary that the bag be carefully secured to the hoop, so that it may not fall. The best length to cut the bags is four and a half yards, and to put into them 300lbs. Many persons cut five yards, and put in as much as 350lbs. but this not only renders them unwieldly, and takes away the neat appearance, but to a large planter, and one whose cotton sells at a high price, it is a loss, *per example:* Say that A. puts into his bags 300, and B. into his 350. A. will make seven bags of what B does six, and if each make a crop of 30,000wt. clean cotton, A. puts into 100 bags what B. does into 85, and if A. sells his at 50 cents, and B. at 30, A. makes a profit on his bagging, there being no tare allowed, and a bag weighing about seven pounds, receives as much per pound for the bagging as the cotton. Should they even sell at the same price, the amount of A's sale will be greater than B's, so you will perceive the difference is in favour of the four and a half yard bags.

On the Preparation of Vegetable Oils.

THE production of the fixed vegetable oils, has in all climates been a source of wealth; and of course has attracted the science, industry, and capital of cultivators. The plants in use are confined to no zone, though growing in greater variety and abundance, in tropical or hot countries.

We, too, have indulged in speculating upon the agricultural value to us, of Oil Plants. These speculations have been generally discursive, or directed to some individual of the class. The only methodical investigation of oil-bearing plants, known here or easily introduced, of which we have ever been informed, was undertaken by the late Mr. George Trescot, in whose education, the exact sciences preponderated so much, as to impress us with the belief, that his inquiries would be valuable for their order and precision, he had, as we learnt, in conversation, made

considerable progress in his researches, but his untimely death, it is presumed, left them imperfect.

In the East, the plants cultivated for this use, are mustard, the fixed oil of which is as mild and bland, as the volatile oil is notoriously acrid; linseed, familiarly known every where. Sesamum and Palma Christi. This last has been successfully cultivated in all parts of South-Carolina, the oil commanding a higher price in the market than any imported. The mode of extraction was generally by boiling. It has fallen into disuse, unable to compete with the profits of our cotton culture, and perhaps, in some degree, from the difficulty of the harvest: the seeds ripen successively, and are shed by the plant as they mature, the loss in this way bears heavily upon the whole crop. It is cultivated like Indian corn, but we are without any circumstantial estimate of the expense and profit of growing it. Many gentlemen resident near Beaufort could supply this estimate, and we hope to draw the attention of their Agricultural Associations to it.

The sun-flower seed is used in a limited degree in Europe, from the Spanish peninsula to Russia, and its cultivation has been earnestly recommended in the United States, where, in some instances, it has produced 60 or 70 bushels to the acre, the bushel yields three quarts of cold and one of hot pressed oil. Notwithstanding the plausibility of this account, we know of its growth only to feed poultry, and especially turkeys, which thrive upon the leaves and seeds, and, perhaps, it is used quite as much for the pleasure of its flaunting flowers, as for any profit which it brings.

At Arras, and other places in France, extensive tracts are covered with poppies, which adorn hill and dale with their rich variety of bloom. These are intended to produce seed only, and large mills are erected to crush and press the oil from the seed. When first pressed the oil is colourless and insipid, and the avowed object is to adulterate with it, the more costly olive oil. The same cultivation prevails in Flanders.

All plants producing oil exhaust the fertility of countries in which they are extensively grown, and in fact, they will grow thriftily only in the richest soils. At the mention of exhausting plants, the memory of every reader promptly recalls the cotton, now about to derive from its seed a new recommendation.

A mill for preparing the cotton-seed oil, was erected at Petersburgh, in Virginia, several years ago, by Follet & Smith, patentees of that part of the apparatus intended to hull the seed. This process was considered indispensible, and the owners of the patent-right set upon it so high a value, as to deter from the general adoption of it. A small establishment on their plan was made in North-Carolina, and General D. R. Williams, of Society Hill, in South-Carolina, is believed to have erected a mill after Mr. Smith's plans, we should be glad to hear the results from our friends in that quarter. In order to bring their mill into prominent notice, Messrs. Follet & Smith obtained from our Legislature an Act of Incorporation for a Joint Stock Company, to hull cotton-seed and press oil, but the project has not excited attention, and seems likely to rest in the hands of the patentees.

Launcelot Johnson, of Georgia, invented an instrument for hulling cotton-seed, which he describes as a truncated cone, furnished with teeth, which revolves in a tub adapted to its form, and also furnished with teeth; the two sets of teeth pass near each other and tear off the hull, this is separated by a sieve and fan from the kernels, and the kernels are pressed. One thousand pounds of upland cotton will produce twenty-five bushels of seed; three bushels of seed produce one of kernels, and one of kernels produce two gallons of oil, or one and a half to two bushels of seed, will produce one gallon of oil. This contrivance has not been patented, but on the contrary, the most liberal offers of its use extended through the public prints, with the earnest recommendations of the Hon. Mr. Clayton of Georgia. It has the appearance of a cheap, easily managed, but imperfect engine, and other means supposed to be more efficacious have been adopted.

Individuals in New-York are known to use methods of expressing and purifying cotton-seed oil. And the Messrs. Freemans, of Philadelphia, extract the oil without hulling, and clarify it very perfectly; their methods are, we believe, secrets of trade.

Messrs. Plummer & Miller erected in 1833, a very extensive mill at Natchez, moved by a powerful steam engine, and brought to this enterprise all that capital and organized labour can provide for it perfection, their mill has been in profitable operation ever since, and they have

secured the most perfect means of purifying their oil. We learn from a traveller, that they have been joined by James H. Couper, Esq. of the Alatamaha, and to these associates, an Act of Incorporation was granted during the last year, for half a million capital, the establishment at Natchez, being rated at $100,000 in stock. Steamboats ply up the Mississippi, and its tributaries for the collection of seed, the rank fertility of the soil makes this of no value as manure; and it is obtained in part, at least, for the labour of its removal. Branches of the Natches' mill, have been and will be extended through that country.

Mr. John Couper, jun. of Georgia, is the proprietor of a mill of considerable extent at Mobile. His oil when purified by processes, lately introduced, sells there at 90 to 120 cents a gallon.

Cotton-seed oil is consumed, *in painting;* in this use, its character is that of an oil drying very slowly—more slowly than linseed-oil, and unless purified, darker in colour; in *burning*, in this, it produces no effluvia and little smoke; in *manufacturing woollen cloths*, in this, its value seems yet uncertain, indeed, very doubtful. For *machinery*, where we should suspect it of too great a tendency to become inspissated, though they say not; and in *adulterating* castor oil, for which it is recommended as a mild substitute.

The meal or oil cake has great value in feeding stock, even hogs partaking of it without injury, the removal of part of the oil, and perhaps, the hull render it more digestible than before. Negroes employed about the mills frequently mix it with their corn-meal as a savoury ingredient; and we have been assured by an eye witness, that it is a decided improvement.

It does seem strange that this State should be the most tardy in turning to account a very valuable product. At length, however, if we are not misinformed, one of our skilful and wealthy planters, is about to embark in the business of pressing and purifying cotton-seed oil here at home.

We solicit from our distant readers intelligence upon this subject.

CONDUCTOR.

Bene Plant, (Sesamum orientale.)

To the Editor of the Southern Agriculturist.

"Walnut Grove, District of Orangeburgh, July 7, 1835.

Dear Sir.—The leaves of the Bene plant *(Sesamum orientale)* soaked in water for the space of one hour, afford a rich and bland mucilage equal, if not superior to gum arabic. This mucilage sweetened with loaf sugar and taken in small doses, has been found efficacious in allaying the troublesome cough and wasting diarrhea in *Phthisis Pulmonalis*, or Pulmonary Consumption. Having witnessed its soothing effects in a very advanced stage of this formidable disease, I can, with confidence, recommend it. Simplicity is not among the least of its recommendations, I rather think it ought to be its greatest.

Very respectfully, dear Sir, your friend and fellow-citizen.

MEDICO BOTANICUS.

The Fig, (Ficus Carica.)

A native of Caria, in Asia, whence its name; known in the warm climates of Europe and Asia; in its wild state bearing fruit; perfect in the development of the parts of fructification, but without flavour; those in which the stamens are most conspicuous are apt to fall before maturity, and are used to impregnate and accelerate the ripening of cultivated figs. This practice is said to prevail under the name of caprification, and has given rise to controversies among travellers in the Levant. The only inaccuracy fairly chargeable upon those who assert the existence of the custom, is, perhaps, an affected exactness in the details described, and some extravagance in the results attributed to it. The practice occupied more attention than its importance would seem to have warranted, and has now become a mere matter of curiosity.

Other modes of forcing the fruit to maturity are said to have consisted in puncturing the fruit at the flower end, or inserting in that end a drop of oil.

This use of oil has been made familiar to us by experiments at home; in our 4th volume, page 224, the use of olive oil or hog's lard in Florida, is described as ripening green and hard figs in seven or eight days, several weeks

in anticipation of the regular period of maturity. At page 388, several members of our Horticultural Society concur in stating that oil applied to the flower ends of fruit from 1 to 1½ inches in diameter, ripens them fourteen days earlier; that oiling the whole fig was injurious; and that the use of oil to those less than one inch in diameter, caused them to fall off, without coming to maturity. At page 473, a drop of oil was applied to the centre of the flower end of the fruit, in less than 24 hours the fruit began to swell and matured a fortnight earlier than those without oil. At page 534, there is reason to believe that the limit to a beneficial use of oil, is in anticipating by seven or eight days the usual time of ripening. The fruit touched at an earlier growth either fell off or was insiped; olive oil or sunflower oil were found effective, tallow and lard ineffective; the trial was extended to both black and lemon figs. At page 582, its mode of operation is discussed, which it seems to be by arresting the growth of the part touched, and giving to other portions of the fruit extraordinary stimulus.

We delight in this fruit, and remind our friends of the results recorded as an introduction to what we now propose.

Although one or two doubtful cases have been mentioned to us of the growth of seedling trees here, we think ourselves safe in saying, that no other mode of propagation is known to us, but by cuttings, layers, or suckers.

Many varieties are cultivated here, and of each variety, there are great differences observable in the quality of fruit from individual trees. We propose that every person possessed of a peculiarly fine tree, should take note of its production, and enable us to record a description of the tree and its locality, with a view to the extension of its culture.

The storm of 1822 blew down a tree so large, that it could not be replaced without cutting off its branches; these were trimmed very short, and the tree erected, put forth a vigorous growth of wood. The next year the fruit was so much larger and richer in flavour, as to induce this resolution, of three trees, to cut one close each year, and thus secure a constant supply of fruit from young wood upon large stems; the suggestion is thrown out with the hope of provoking trials to be communicated to

us hereafter. The three following sorts are not known to us, and if they exist here, we should be glad to hear of them.

Large white Genoa, fruit large, pale yellow without, red within.

Brown Turkey, large, reddish brown.

Black Genoa fig, fruit purple, almost black, large at the flower end, becoming slender at the stalk, downy and coloured like a rich plum.

In the garden of Mrs. Wagner, St. Philip's-street, there existed last year, a very fine tree, suspected to be a brown Turkey fig, we hope to hear that it escaped the frost, and recommend it to our readers.

Our people are not sensible of the value of this luxury, or of our peculiar advantages in its cultivation. The following passage will enable them to compare the ease with which we produce this salutary and abundant fruit, with the pains taking of French gardeners.

"The inhabitants of Argenteuil, near Paris, derive 'their chief support from the culture of fig trees; near 'that town are immense fields covered with these trees, 'on the sides of hills facing the south, and in other places 'sheltered from the north, and the north-west winds.

"In the autumn, the earth about the roots of these 'trees is stirred and dug; as soon as the frosts commence, 'the gardeners bend down the branches, and bury them 'under six inches of mould, which is sufficient to pre-'serve them from being frozen.

"The branches must be entirely stript of their leaves 'before this is done; the gardener then taking hold of the 'top of each branch, bends it down gradually, and with 'much care, to prevent its breaking, placing his knee or 'hand under such parts as resists the most; the branches 'that will not bend low enough to be buried, are cut off 'close to the ground.

"A fig tree will remain buried in this manner seventy-'five or eighty days without harm; when the season is 'mild, the gardeners uncover them, especially in times of 'warm rains, but on the first symptoms of frost they are 'again buried. Severe frosts sometimes reach them, but 'the branches only are destroyed. The roots produce a 'new crop in the summer; but these do not bear fruit till 'the next year, and are more tender and liable to be kill-

'ed by frost during the next winter, than older and more 'woody branches.

"In the spring, the trees are carefully inspected, and 'where a double bud is observed, the gardeners, who are 'able to distinguish a leaf-bud, which is more sharp, from 'a fruit-bud, which is rounder, pinch out the leaf-buds, 'without hurting the fruit-buds; these, as they receive 'the sap prepared by the plant for two purposes, produce 'fruit of double the ordinary size; this is done at Paris 'between the first and tenth of June; but these leaf-buds 'may be suffered to expand a little, till they can be dis-'tinguished with certainty; they must not all be destroy-'ed at the same time. In cool seasons, the ripening of 'the fruit is hastened by inserting a drop of oil in the eye, 'from the point of a pen or took-pick.

"It is necessary in dry seasons to water fig-trees; the 'nature of the plant requires to have its roots cool, while 'its head is exposed to the hottest sun. If planted against 'the south wall of a house near a spout that brings water 'from the roof, it thrives luxuriantly. Figs do well also 'in a paved court; the stones keep the ground under them 'moist and cool, while the surrounding buildings reflect 'and increase the heat of the sun's rays."

Florida Coffee, (Baptisia tinctoria, Cassia occidentales,) Stiptic or Stink-weed.

We acknowledge the receipt of a letter from Mr. Herbemont, and another from L. G. C. upon this plant of transient interest. Both of these intelligent letters have been interesting to us, and under ordinary circumstances, we would furnish them a place in this number. But being controversial in their character, we are loth under present circumstances to create controversy, more particularly as by the recent death of our valuable correspondent, Dr. Capers, we should be precluded from the elucidation of the subject, which his information on it would have enabled him to give. We shall be glad to receive from L. G. C. a more deliberate statement of his plan for an "Ambulatory School of Instruction in Agriculture," which is briefly hinted at in a note to the communication now acknowledged. EDITOR.

PART II.

SELECTIONS.

On Climate considered with regard to Horticulture; by J. F. DANIELL, Esq. F. R. S.

[FROM THE TRANSACTIONS LONDON HORTICULTURAL SOCIETY.]

The subject of this paper is a very important one, it being so often requisite in gardening, either to create artificial climates, or improve natural ones: the former of which is effected by an atmosphere inclosed in an artificial structure, the latter by temporary coverings or other means in the open air. We lay before our readers a condensed review of Mr. Daniell's observations, many of which will enable gardeners to account for certain effects which they have no doubt observed in their practice without knowing their causes.—*Ed. Gen. Far.*

"The basis of the atmosphere has been proved to be of the same chemical composition in all the regions of the globe. All the varieties of climate will therefore be found to depend upon the modifications impressed upon it by light, heat, and moisture, and over these, art has obtained, even in the open air, a greater influence than at first sight would appear to be possible."

"The improvement of natural climate consists in avoiding the extremes of drought and cold produced in nature, by wind and radiation.

The amount of evaporation from the soil, and of exhalation from the foliage of the vegetable kingdom, depend upon two circumstances, the saturation of the air with moisture, and the velocity of its motion. They are in inverse proportion to the former, and in direct proportion to the latter. When the air is dry, vapour ascends in it with great rapidity from every surface capable of affording it, and the energy of this action is greatly promoted by wind, which removes it from the exhaling body as fast as it is formed, and prevents that accumulation which would otherwise arrest the process.

"Over the state of saturation, the horticulturist has little or no control in the open air, but over its velocity he has some command. He can break the force of the blast by artificial means, such as walls, palings, hedges, or other screens; or he may find natural shelter in situations upon the acclivities of hills. Excessive exhalation is very injurious to many of the processes of vegetation, and no small proportion of what is commonly called blight, may be attributed to this cause. Evaporation increases in a prodigious rapid ratio with the velocity of the wind, and any thing which retards the motion of the latter, is very efficacious in diminishing the amount of the former; the same surface,

which in a calm state of the air would exhale 100 parts of moisture, would yield 125 in a moderate breeze, and 150 in a high wind."

When dry winds prevail in the spring, the warmth produced by the sun, in situations exposed to his rays, is sometimes more injurious than useful, by not being accompanied with an increase of moisture. The enormous exhalation from the blossoms thus induced, is extremely detrimental, and requires shading them from the direct rays of the sun. Whilst this state of the weather lasts, great mischief may arise in a very small interval of time, and the disadvantage of a partial loss of light cannot be put in comparison with the probable destruction of blossom likely to be incurred. The shelter of mats or of bunting on such occasions would often prevent the sudden injury which so frequently arises at this period of the year.

Over the absolute state of the vapour in the air we are wholly powerless, and by no system of watering can we affect the humidity of the free atmosphere. This is determined in the upper regions; it is only, therefore, by indirect methods, and chiefly by the selection of proper screens, that we can preserve the more tender shoots of the vegetable kingdom from the injurious effects of excessive exhalation.

Radiation is the power of emitting heat in straight lines, independently of contact; it is a property of all matter, but differs in different kinds of matter. Absorption is another general property differing in a similar manner. To prove the different radiating powers of bodies, on a clear night place a thermometer upon a glass plat, and another upon a gravel walk, or the bare soil; the temperature of the former will be found many degrees below that of the latter. "The fibrous texture of the grass is favourable to the emission of the heat, but the dense surfaces of the gravel seem to retain and fix it. But this unequal effect will only be perceived when the atmosphere is unclouded, and a free passage is open into space; for even a light mist will radiate matter in its course, and return as much to the radiating body as it emits. The intervention of more substantial obstacles will of course equally prevent the results, and the balance of temperature will not be disturbed in any substance which is not placed in the clear aspect of the sky. A portion of a grass-plat under the protection of a tree or hedge, will generally be found, on a clear night, to be eight or ten degrees warmer than surrounding unsheltered parts; and it is well-known to gardeners that less dew and frosts are to be found in such situations than in those which are wholly exposed."

Radiation during the night often cools the air on the surface of the ground to the temperature of 32° or lower. Low vegetation suffers from this cold, but from the foliage of a tree or shrub it glides off, and settles upon the ground. It also glides off from eminences, and settles in hollows.

Any thing which obstructs the free aspect of the sky arrests in proportion the progress of this refrigeration, and the slightest covering of cloth or matting annihilates it altogether. Trees trained upon a wall or paling, or plants sown under their protection, are at once cut off from a large portion of this evil; and are still farther protected, if within a moderate distance of another opposing screen. The most perfect combination for the growth of exotic fruits in the open air would be a number of parallel walls within a short distance of one another, facing the south-east quarter of the heavens; the space between each should be gravelled except a narrow border, which should be kept free from weeds.

The reason for the gravel and the removal of the weeds the gardener will deduce them from what has been stated above as to the radiating properties of surfaces. As an excellent combination for the growth of vegetables in the open garden, we would suggest the formation of beds in the direction of east and west, the surface of the beds sloping to the south, the steeper the better; on these beds sow or plant herbaceous vegetables and fruits; if in rows, let them be from the north to the south, or across the beds; then to moderate the effects of radiation, and evaporation by drying winds, place wattled hurdles at the distance of ten or twelve feet across the beds, or stick in rows of pea-sticks, or other branches and spray, in that direction, during the winter and spring months. The judicious employment of rows of fruit trees and gooseberries would greatly contribute to the same effect in winter, but are injurious by their shade and roots in summer. The advantage of hurdles or branches is, that they can be moved at pleasure, and that they admit of keeping the ground in sloping beds or ridges.

The system of matting plants, Mr Daniell thinks, is not carried to that extent which its simplicity and efficacy would suggest. Mats are generally bound too tight round bushes, or laid too close on the ground, or upon glass. To produce the full effect, the mat should always be kept at the distance of six or eight inches from the body it is meant to protect. As a familiar illustration of the principle, we shall farther observe, that a person standing before a large fire, or fully exposed to the brightest sun, may defend himself from excessive heat and light, by holding at a few inches from his body, a sheet of the thinnest muslin; but if that material, or any other, is applied to his body in close contact, it will have very little influence as a screen. The same muslin integument will be equally effectual or ineffectual in protecting from cold, according as it may be placed at a short distance from, or in contact with, the body to be protected. A gardener will seldom go wrong in practice if he bears in mind that heat is given out by all bodies in straight lines or rays, as light flows from the sun; that those rays of heat may be reflected back again by any body, however thin; and that any covering, whether thick or thin, placed in close contact with a heated body, will not reflect back its heat, but, on the contrary, if of dark colour, or black, will promote its escape by radiation.

The above is what may be called the practical essence of that part of Mr. Daniell's paper which treats of the improvement of natural climate. By reflecting on it the cultivator will be convinced of the reasonableness of many parts of practice, which he had, perhaps, followed from habit; he will see and feel the importance of walls, copings, hedges, protection from the east, from sudden gleams of sunshine, of the warmth retained by woody undergrowths, and, generally, the advantages of stagnating air; of placing gardens on sloping ground, of growing crops on ridges, and a great variety of other things. He will also be able to account for the effects of cold in hollow placess; for the difference of effect between dry cold and moist cold; for the lower branches of a tree being sometimes injured by frost, when the upper part has escaped injury; of tender plants, in a northern or western exposure, sometimes escaping unhurt, when those against a south wall have been killed, &c.

English Review of American Husbandry.

[FROM THE LONDON GARDENER'S MAGAZINE.]

Upon Fessenden's Farmer.

On looking over the body of the work, we find as may be expected, little that is not already in works well known to the British public; though, occasionally, there are passages which are new and interesting to many of our readers. Under the head of pasture grasses, it is obseved, that "few of the grasses most valuable in Great-Britain for pasture are the natural growth of the United States; but it is believed that if the seeds were once introduced upon the American farms, we should find little difficulty in naturalizing them." This is a remarkable fact, which was long ago noticed by Mr. Cobbett. There are very few perennial grasses indigenous to Russia; and we believe the same thing is the case in all countries having winters of six or seven month's duration. It is certain, however, that perennial grasses will live and thrive in such countries; though it cannot be expected that they should yield as much produce in them as in those countries where they are kept in a growing state nearly the whole year. The perennial grasses in the neighbourhood of Edinburgh are in a dormant state for three months in every year: in the neighbourhood of London they are not in the same state for more than two or three weeks. In general, in all countries having long winters, annual and biennial grasses will be found to produce larger crops than perennial. Clover and rye-grass produce immensely both in Poland and Russia, and we have no doubt they would do so also in America; where it appears, however, that the red clover is not much known, though the white clover is produced in some districts spontaneously. For hedges, the Rhámnus cathárticus is preferred, in some parts of the country, either to the hawthorn or the locust tree; and, in other parts, the Cratæ'gus cordàta is preferred to the Cratæ'gus Oxyacántha. Mangel wurtzel is much cultivated, and upwards of 33½ tons have been raised on an acre. A plough, formed wholly of cast iron, is in general use among the best farmers; but there are a number of other sorts, with American names, which, being neither figured nor described, we are unable to judge of with regard to their merits. "The tree and bush puller is one of the most useful and effective implements in use; it is employed in clearing land of under-brush, small trees, barberry, and other bushes. It is of iron, of any size or dimensions required, something in the form of a rake or claw, with the teeth much bent. The ground is loosened around the tree or bush which is to be removed. The teeth, or claws, are entered on one side, a horse or oxen are attached by a chain to the claw, and drawn on the opposite side. One man and horse, or one yoke of oxen, will do more work with this implement than five men can do without it, in digging and clearing land." The work concludes with a calendar of operations to be performed throughout the year.

Though this volume is, for the greater part, compiled from British publications, yet there is enough in it to enable us to form some idea of the state of agriculture in the United States. The most remarkable feature is, the great number and variety of the implements and machines in use. This forms a very striking contrast to the infant state of agriculture in Britain, where, a century ago, there was not more than one kind of plough, cart, or harrow, in use throughout the whole

of Scotland, and only two or three sorts in England. The cause of this difference is easily accounted for; the Americans are full of intelligence, and the high price of labour obliges them to seek aid in improved machinery.

What are the Effects of Hilling up Corn.

[FROM THE SOUTHERN PLANTER.]

Mr. Editor,—Can any of your readers tell me the reason why any benefit is derived from the common practice of forming a hill around the stalk of corn at a certain period of its growth? I know this practice is very general, almost universal; and perhaps was derived from the aborigines, from whom we derived the plant itself. Certain it is observed by them; and it is probable that when our ancestors found them in possession of the grain, they took it for granted that they were also in possession of the best mode of cultivating it: but we have departed from their practices in some things; perhaps we might find it profitable to do so in this. Many old habits are blindly persisted in, without any inquiry as to their beneficial or injurious effects. And is not the practice of *hilling up* corn, one of them? What are its effects? It seems to me that the pointed hill around the stalk, by throwing off the rain, tends to deprive it of a necessary share of moisture; and by heaping up the earth, the surface roots, whose healthful and vigorous action depends upon the influence of atmospheric air, are greatly injured, by placing them beyond this influence. Carry the same practice into your nursery or orchard, and what would be the consequence? Continue to heap the earth around your vines, or your fruit trees in like manner, and in like quantities proportionate to their size, and they would shortly perish. And though the hardy constitution of the corn plant may preserve it from entire destruction, yet it is not, therefore, certain that it suffers no injury from the practice. But, says one, "my corn will fall down if I do not hill it up." Perhaps it will, and what is more likely *it will fall down after it is hilled up*. Its falling down may be occasioned by its having been planted too close; and its crowded position forces up a tall, spindling stalk, without room for roots to support it. Or it may be that the soil is too hard, by reason of not ploughing, for the roots to penetrate. Its falling down is the consequence of weakness, of infirmity, and smothering down the roots must only increase that tendency. I should like to hear from the experience of others.

Yours,

AGRICOLA.

Suckers on Indian Corn.

[FROM THE MAINE FARMER.]

Farmers have been divided in the opinion, whether it was best to deprive Indian corn of the suckers which are given out from the roots, &c. or not. We have been inclined to the opinion that it was best, considering them as depriving the kernel of food which it ought to have, and thereby lessening the crop.

Some statements in the last Cultivator, if correct, prove that it is wrong to cut them off, but that they should be allowed to spindle and become matured with the other stalks. Why this should be done will be best understood by stating a few items of the process of fertilizing the

seeds of plants. It is a fact, that plants are both male and female, and that the yellow dust or pollen which is produced by a certain part of the flower must be received or a portion of it by another part of the flower or plant, and conveyed to the seeds or they will never come to maturity. Now pollen, in Indian corn, is formed by the spindle, and this must descend upon the silk which is put out from the husk or ear, and be thence conveyed to the seed, and causes it to become matured or ripened. Hence the reason why some rows of corn in an ear or the tips of some ears, have no kernels; they have not received any pollen. The statement of the person alluded to is to the following purport, viz: the lower portion of kernels put out the silk first, and the higher ones, in succession—a new circle of them presenting themselves continually until they are all out and all impregnated. Now the male blossoms, on the spindle, do not remain in vigour more than six days, and if the weather be hot and dry not so long. There is danger, therefore, that all the kernels will not become fertilized by the main stalks, but the suckers coming after in succession, will afford sufficient for the purpose, and the ears become filled. There is not the least doubt on the score of the necessity of the pollen of the spindle for rendering the kernel of the ear plump and good; but the question to be decided is—does the spindle of the main stalk ever fail of doing this? If it is uncommon for them to do this, then the suckers, if they grow up and spindle in season, are absolutely necessary, and should never be cut down. It is a subject worth examining, and we hope our farmers will watch narrowly this summer and test the truth of it.

Root Crops—Ruta Baga.

[FROM THE GENESEE FARMER.]

EVERY innovation in the existing system of farming should be received with caution; but this caution should never be carried to such an extreme as to prevent improvement for the better, nor to hinder our keeping pace with the progress of knowledge in the cultivation of the soil. The rapid advancement which agriculture has already made in the present century, shows, that like all other arts, it is susceptible of great improvement; but unless new courses are occasionally marked out and pursued, and new experiments instituted, this art must always remain stationary. Had innovations *never* been admitted, many of the most common and most valuable modes of culture now pursued, would have still remained unknown; and many principles in the art, yet to be unfolded, will remain hidden so long as the beaten track alone is pursued. Some farmers, indeed, are wholly opposed to every practice which was not followed by their ancestors, without at all examining its merits; and are not altogether unlike the man carrying grain upon his horse, who balanced it all on one side of the animal's back by a huge stone in the bag on the other, simply because his father and grandfather had done so before him.

We are not, however, about to recommend a practice which has been heretofore untried. For although the culture of root crops has received but little attention from the majority of farmers in this and the adjoining States, yet numerous experiments, made by individuals in various parts of the country, have shewn that this branch of farming may not only be successfully pursued, but with the greatest advan-

tage and profit. Judge Buel, who has cultivated ruta baga for many years in succession, has raised an *average crop* of *six hundred bushels* to the acre. Estimating the expense of one acre at twenty dollars, such a crop would cost but little over three cents a bushel. Judge Buel states, however, that his crop, including manure, labour, and securing for winter, has generally cost him but from two and a half to three cents per bushel. But even if a crop should cost double this sum, still, it would prove highly profitable as food for domestic animals. A writer in the American Farmer vol. xiv. page 324, who raised five hundred and fifty bushels on one hundred and two square rods, (equal to eight hundred and sixty two bushels to the acre,) estimated the saving of hay in feeding this quantity to his three hundred sheep, as equal to eight tons; and that the improved condition of the sheep, was such, by feeding them with hay and turnips, instead of hay only, that ten lambs would be saved for every hundred sheep. Besides the profit of cultivating this root as a substitute for hay merely, the eminent advantages it possesses in preventing diseases in animals when intermixed with dryer food, should not be forgotten. John Hare Powel, says, "Too much importance cannot be attached to the production of esculent roots, to a certain extent, for the promotion of health, and useful secretions of neat cattle and sheep. Half the diseases with which they are assailed, proceed from indigestion or obstructions, occasioned by unwholesome dry food."

We will appropriate the remainder of this article to a few practical directions on the cultivation of the ruta baga as a field crop, as the time is now approaching for a commencement of operations.

Sandy and sandy loam soils, where they are sufficiently manured, are considered best for this as for all kinds of turnips, but any rich, dry, and mellow soil is good. The more, however, it inclines to sandy loam the better. Clay is the worst, and wet soils are wholly unfit for its culture.

The time for sowing should be about the middle of June,* but the crop will generally succeed well if sown two or three weeks later. At least one pound of seed should be sown to the acre, although one half of this, if the plants were properly distributed, would be abundant. But they are easily thinned afterwards, leaving an even crop.

The following is a common mode of preparing the ground. It is first deeply ploughed and then harrowed; furrows are then run at distances of two or three feet apart, by passing the plough twice in the same place; and in the bottom of these furrows suitable manure is to be placed. A plough is then passed on each side of the manure to cover it, forming a ridge, on which the seed is sown in drills. A little fine manure scattered along the drills before sowing, is very advantageous, by bringing the young plants forward rapidly, so as the sooner to be beyond the reach of the fly.

Another method is to transplant ruta baga from a bed previously sown; this admits of its being done nearly a month later than the ordinary mode, so that it may occupy ground from which a crop of the present year has been previously taken. This, although a successful practice, is troublesome and expensive when adopted on a large scale, and is not, therefore, to be recommended for field culture.

In preparing ground for ruta baga, Judge Buel says, "My general practice has been to manure well a piece of pasture or clover ley from

* August is the time best suited to the Southern States.

which the hay has first been cut, plough it handsomely over, and harrow it well."

It has been recommended instead of dropping the seed evenly along the drills, to drop a few in bunches about one foot apart; and then in thinning, all but the most vigorous plant in each bunch are removed. This method also better admits of the young plants standing until beyond the reach of insects, as they may be hoed in the rows before thinning.

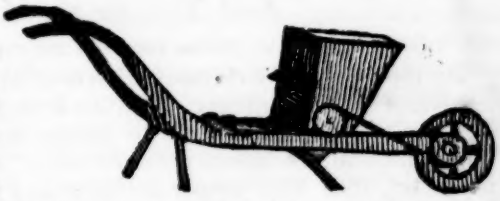
A cultivator should be passed between the rows as soon as the plants are large enough to be seen, and the spaces between the plants cleared with a hoe. A very essential point is to keep the crop clear of weeds, and this should be done in the earliest stages of their existence, when the labour is comparatively small, and the injury still less which they will occasion to the crop.

Although there are some parts of the country where this crop will not succeed so well as in others, yet probably in most places, it may, with care in selecting a suitable spot of ground and other attention, be made to yield a profitable return. At all events we would recommend to farmers generally to try the experiment upon a moderate scale. And let no one be deterred on account of the partial failure of a first crop. Experience and perseverance will overcome most difficulties.

From an article in the Cultivator on this subject, we select the following remarks on the improved implements now used in the culture of turnips:

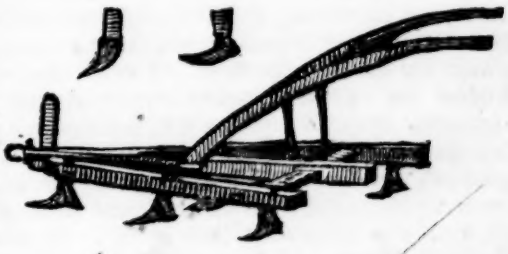
The implements used in the turnip culture, which are figured below, are useful for various other purposes on the farm or in the garden. They are—

THE DRILL-BARROW,



Which is made in different forms, and is used in sowing various small seeds as onions, radishes, lucern, beans, peas, &c. The machine is propelled like a wheel-barrow, sows and covers the seed at the same operation. The cut represents the one we have in use. They are manufactured by Mr. Craig, of Galway, and sold at $8. A barrow somewhat differently modelled, has been invented in Lewis county, which has been highly commended for its value in planting corn. Price $15.

THE CULTIVATOR,



Is the most useful implement we know of for dressing Indian corn, as well as ruta baga.—By being passed frequently between the rows, the ground is kept free from weeds, and in a fine state of pulverization, while the manure and vegetable matter are left under cover, where they are most beneficial, and the roots of the plants preserved from injury. It should be passed twice at a dressing,

and if the soil is stiff or grassy, it may be passed oftener, or repeated at short intervals. The teeth are of various forms, according to the purposes for which they are used. Some of these are figured in the cut. It is most convenient to have sets of different kinds, and the cost is trifling, that they may be shifted at pleasure. Our late excellent neighbour, Joseph Bullock, used effectually to extricate the quack grass in his corn ground, by the frequent use of the Cultivator, the teeth of which he had modelled for this purpose. They are manufactured by Mr. Craig, and, together with the drill-barrows spoken of, kept for sale by our enterprising friend, C. N. Bemet, who is making some improvement on both these implements. The Cultivator is often denominated horse-hoe, scuffler, scarifier, &c. It has sometimes a wheel attached forward, to regulate the depth.

THE TURNIP HOE,

Is a very simple, but useful implement, particularly in the garden, where it greatly facilitates the weeding process. We have seen them of various lengths, from four to ten inches. They should be cast-steel, and may be made of an old file or rasp; the blade should be thin, and not more than one and a half or two inches broad. They may be drawn the arm's length without being raised, and there is little danger of cutting the plants among which they are used.

Seed Time for the Mulberry.

[FROM THE SILK CULTURIST.]

By the following communication from Mr. Boynton, an experienced cultivator of the Mulberry, it will be seen that he considers the month of August a favourable time for sowing the seed. We have heard other practical gentlemen make the same remark, and are inclined to the belief, that with proper attention and protection, the plants will be as forward the second year as those that are sowed in the spring. We hope such gentlemen as have not sowed nurseries, will avail themselves of the new crop of seed and put it into the ground the present season.

"South Coventry, (Conn.) June 25th, 1835.

Sir,—The scarcity of mulberry seed the present season having prevented many persons from sowing nurseries in the Spring, I take the liberty of informing them through the medium of your paper, that from experiment, I am satisfied that the month of August is a suitable season for sowing the seed. If sown any time during the month of August the seed will vegetate quickly, and by the time of the early autumnal frosts, the plants will have grown to the height of three or four inches. They may then be easily covered with straw and horse manure, which will sufficiently protect them through the winter. In covering them but little straw should be used, otherwise, the rats and mice may be induced to burrow in it, in which case they will most assuredly destroy the plants. If the seed is sown at this season and protected in this manner, they start early the following spring, grow vigorously through the summer, and by autumn attain about the same

height as though sown the preceding spring. Another advantage from sowing in August is that seed of the same year's growth may be obtained, which is more sure to vegetate.

J. W. BOYNTON.

Spurious Mulberry Seed.

[FROM THE SILK CULTURIST.]

A correspondent at Harrisburgh, Pa. under date of the 12th of June, writes to us as follows on the subject of spurious mulberry seed. It is of the first importance to plant good seed and of the best variety. There is no doubt such a variety of the mulberry as his friend describes, and whoever has the misfortune to be imposed upon by it, ought to attribute the poor quality of his silk to its foliage rather than the variety of the worm, or the climate. Persons, therefore, who are embarking in the business should be particularly careful in the selection of seed. We know of no mulberry of the variety referred to in this quarter, and can recommend the seed gathered in this region as being the right kind, and generally of a good quality.

"Harrisburgh, (Penn.) June 12, 1835.

Dear Sir,—A friend of mine in Chester County, Penn., who has a considerable plantation of Italian mulberry trees and a Cocoonery, and has been making some successful efforts to introduce the culture of silk in this State, takes a warm interest in what is going on in that respect with you, and writes to me, under date of the 9th inst, as follows:— * * * * * * *

"I have been informed, that it [says the Silk Culturist] has contained some articles that I think will be prejudicial to the culture of silk in this country, *i. e.* recommending seed to be purchased from seed stores. Now I know, that the danger (as I myself have seen) is great of getting Hybrides by this mode. A gentleman of this neighbourhood has such, and this spring procured several dozen from me of the genuine Italian. There is a large Hybride at Bethlehem, from which a vast quantity of seed has been sold; the effect will be silk of an inferior quality, and if this continues to too great an extent, people not knowing the cause, and judging from specimens from such trees, will conclude it is occasioned by the climate not being congenial to the constitution of the worm, all of which I have taken much expense and care to obviate."

Gama Grass.

[FROM THE SOUTHERN WHIG.]

Mr. Jones,—I feel it my duty to call the attention of my fellow-citizens to the invaluable article of Gama grass. Will you permit it to be done through the columns of your paper? The public, as well as myself, have seen for the last few years, several publications on this subject, from respectable citizens in different States of the Union. I fear, however, that in many instances those statements have been regarded as exaggerations, and neglected accordingly. The result of the experiment which I have made, convinces me that I have never seen any thing written on the subject, which went beyond the real value of the grass. In January, 1834, I procured some roots from the late Judge Crawford, which had come from the seed the preceding May.

I also obtained a few roots from the plantation of Dr. Neisler in this county, the native growth. In order to get as many plants as possible, I made a separate plant of every stem, that had the least fibre of a root. These plants I set out on an exceedingly poor spot at the distance of eighteen inches apart one way, and 24 inches the other. The only manure I applied was about a handful of half rotted pine shavings to each root. Last summer the plants were neglected, and the place was completely overrun with pumkin and other vines. Last winter, as we all know, was exceedingly severe, and the spring unusually late. I think it was the middle of April before the grass began to put forth. On the first Monday in the present month, (May,) I cut from it a heavy crop of grass. On the third Monday of the same month, I cut it a second time, and its average length was then from 19 to 22 inches. The third crop is at the present time, on the fourth Monday while I am writing, from 12 to 14 inches long, the growth of just seven days. All who have published on this subject, say that it can be cut on the first of May, and every month till frost. This would give seven crops in the season, and if it were cut every four weeks, the last of the seven cuttings would fall about the middle of October. I believe, from my experiment, that every three weeks it would yield a crop three feet high, on the poorest lands: that on which I have experimented being of that character. When I cut it last, I weighed the produce of 4 roots, which yielded 2½ pounds green grass. After being thoroughly dried in the sun for three days, on the evening of the fourth, I weighed a second time, and found it to contain half a pound of hay of the richest fragrance, and I should say of the very best sort. It would appear to me that this was a great falling off, (though I am entirely ignorant on that point,) and that it was owing to the grass being so very young, two weeks, consequently very succulent. I do not believe, that at the age of four weeks the falling off in drying would be as great as five to one, as in the preceding instance. Be this as it may, the result is such as must satisfy the most sanguine, and the calculation very easily made. The side of a square acre measures 208¼ feet, Planting the grass, as mine is planted, 18 by 24 inches, it will give 104 plants one way to the acre, and 139 the other, which multiplied together, the product is 14,456, the number of plants on the acre. Now, half a pound to four roots in two weeks, is equal to a pound in four weeks, or one-fourth of a pound to each root in that time. This will be equal to a pound and three-fourths of hay to each root at the seven cuttings. Multiply 14,456, the number of roots on the acre, by 1¾ pounds, the product of each, and you have 25,298 pounds of hay a year to the acre. This requires no further culture, after the roots are well set, than simply the cutting and curing. It must be borne in mind also, that my grass does not yet cover one-sixth of the surface. When the surface gets covered, I have no doubt the product will be at least 100,000 pounds a year to the acre. Let it be remembered also, that the experiment made by me, is by no means a fair one, either as regards soil or culture. I am satisfied that any person can obtain equal or greater results, on almost any soil, with very little trouble. There are several kinds of the Gama grass: I have two kinds; but the native, which I obtained from the plantation of Dr. Neisler. and which grows in scattered bunches all over the State, is vastly superior to the other. I have given you facts, Comment I consider unnecessary.

Respectfully, yours,

JAMES SHANNON.

On the Field Culture of Beans.

The following remarks on the culture of field beans, are (says the Genesee Farmer) from Judge Buel:

"Beans may be cultivated in drills or in hills. They are a valuable crop; and with good care, are as profitable as a wheat crop. They leave the soil in good tilth. The China bean, with a red eye, is to be preferred. They ripen early, and are very productive. I cultivated beans the last year in three different ways, viz: in hills, in drills, and sowed broad-cast. I need not describe the first, which is a well known process. I had an acre in drills, which was the best crop I ever saw. My management was this:—On an acre of light ground, where the clover had been frozen out the preceding winter, I spread eight loads of long manure, and immediately after ploughed and harrowed the ground. Drills or furrows were then made with a light plough, at the distance of two and a half feet, and the beans thrown along the furrows about the 25th of May, by the hand, at the rate of at least a bushel on the acre. I then guaged a double moul-board plough, which was passed once between the rows, and was followed by a light one horse roller, which flattened the ridges. The crop was twice cleaned of weeds, by the hoe, but not earthed. The product was more than forty-eight bushels, by actual measurement. The beans brought me one dollar the bushel last fall. The third experiment was likewise upon a piece of ground, where the clover had been killed. It was ploughed about the first of June, the seed sown like peas; upon the first furrow, and harrowed in. The drought kept them back; but about 65 rods of ground, on which the experiment was made, gave a product of twelve and a half bushels. The crop was too ripe when it was harvested, and as it was cut with a scythe, I estimated that about two and half bushels were left upon the ground. No labour was bestowed upon them from the time they were sown till they were harvested."

Destruction of Weeds.

[Read before the New-York Agricultural Society, at its last meeting, by H. Hickcock, Esq.]

The spirits of turpentine I have found a subtle poison to all plants experimented upon, and among others, I have applied it to milkweed, burdock, and Canada thistle; a teaspoonful dropt on the stem will run down and destroy it to the ground, and if the root is not, on the first trial, destroyed, a repetition will be sufficient. This remedy may be of particular use where weeds start up from under stone walls or other inaccessible places.

Johnswort is regarded by many farmers as more noxious than the Canada thistle. It frequently usurps the whole fields to the exclusion of all the valuable grasses. On some spots of land covered with this weed I spread gypsum, at the rate of three bushels to an acre, and had the satisfaction to find that the spots were soon covered with a thick mat of white clover and other grasses; while the Johnswort was fast running out. It is quite possible that a less quantity of gypsum per acre might answer a similar purpose.

Compost.

There are two ways of making a compost, or mixture of earth with manure. Agreeably to one method, a mound is formed in the barn-

yard or near it, consisting of alternate beds of manure and earth. when the manure has fermented, the mass is turned over with the spade and partially mixed. After a renewal and subsidence of fermentation, the materials are again turned over with a spade and more thoroughly blended together. The compost is then drawn out and spread on the field.

The other way of mixing earth with manure, is much less laborious and expensive, and is thought to be, in many respects, more advantageous. The method is this. In the spring of the year, draw out all the manure, including straw, cornstalks, cobs, and all other coarse materials fit for the purpose, into the field; spread it, and turn the whole under the soil, from six to twelve inches deep, with the plough. In order to have the work well done, one or more persons must follow the plough, and with a rake, or hoe, or fork, place the coarse manure in the bottom of the furrow.

When the manure is not spread over the whole of the field, as in common cases, and the coarse materials cover a still less portion of it, one person is sufficient to follow the plough. But when a lot is entirely covered with coarse manure, two followers will be required, and even three if the business is not properly arranged. The following regulation will save the labour of one hand, by rendering unnecessary the passing and repassing of the rakers, which the method suggested by our first thoughts, would require. The first raker must set in after the plough, and continue his course; when the plough, has performed one bout, the second raker begins his course. The first raker upon completing his round will stop: for he will find the furrow here filled with manure by his companion; but his stop will not be long, for the team will close upon him, barely allowing him to step aside and permit to pass; when he again sets in with his rake, or hoe, or fork. In this way the business will be conducted with great regularity and to the best advantage.

When the manure has been thus buried under ground, it is usual to plant corn in the field, that plants may be present to partake of the food which the manure furnishes during its decomposition, and also, to keep the field constantly producing valuable crops. In the autumn after the corn is gathered, the soil is turned over with the plough, and with the assistance of the harrow, the decomposed manure and the soil are well mixed together. The compost is now perfected and the field is in a state of preparation for winter grain.

To this method it has been objected, that the gases, which first escape during the fermentation of manure, are poisonous to plants, and that their disengagement should be effected. in places where they could not exert their efforts injuriously. The results of several experiments which I have made, would appear to speak a different language from this.

I excavated a spot in my garden about a foot deep, and filled it half full with clean wheat straw; over this was thrown the soil which had been displaced. and melon seeds were planted. The fruit was the largest and best I had ever raised. Upon examination, I found that the straw had undergone a thorough decomposition.

Another spot in the garden I trenched, to the depth of two feet, and deposited in it manure from the horse stable six inches deep, and then filled the trench with the soil which had been thrown out. On this bed were thrown parsnip seed; when the roots had attained the size of a goose quill, I dug some of them up. The roots had passed straight

down to the manure, and at this depth, which was eighteen inches, they were of two-thirds of their size at the surface; the roots when dug up for the table, were rather long than large, and they were excellent.

I excavated another spot in my garden, three feet in diameter and a foot deep, and threw in fresh manure from the horse stable, without any admixture of straw, to the depth of six inches, after it was pressed down. In the centre of the manure I placed a stake two inches in diameter, and completed the filling up with damp clay, well stamped down with a spade. The stake was then withdrawn, and the hole, having the capacity of about a pint, was filled with garden mould: in this were planted two kinds of corn. The stalks of these plants were not large; but from the first, they preserved a healthy colour, and each one produced a fair ear. The particulars of this experiment were so arranged as to cause the gases evolved from the manure, to act with the greatest force on the tender roots of the corn plants as they become developed; and when we consider the effects of the extreme drought which prevailed last summer, and that the roots of these plants were confined to about a pint of fertile earth, it is reasonable to suppose that the manure supplied them with wholesome nourishment rather than concentrated poison. If coarse manure be but thinly covered over with earth, the soil will be too puffy and dry to produce healthy plants; but I can assert from repeated observations, that the hottest kinds of manure, buried a few inches deep, warm the soil, and give additional vigour to vegetation as well in the gardens as in the fields.

Cause of Failure of the Potato Crop.

[FROM THE NEW MONTHLY MAGAZINE.]

Mr. Hickley has communicated to the "Irish Farmer's Journal," a very singular and successful experiment tried upon the potato in the county of Dublin. A gentleman who holds a farm of 150 acres, planted in the usual manner 34 acres under potatoes in 1832; the result was a complete failure of the crop. This induced him to try many experiments upon the root, all of which failed except the following: he took six potatoes and divided them into twenty cuts; he then get a large basin of water, into which he put a cupful of salt and a piece of blue stone about the size of a walnut. He put ten of the cuts into the basin, and let them remain there one entire night. On the following day he procured a very strong microscope, through which he examined the entire twenty cuts. On the ten cuts which were not immersed in the basin he could distinctly perceive many small white particles like eggs; and those cuts which were not immersed presented no such appearance whatsoever. This discovery urged him to follow up the examination attentively; and every day for a short period, he continued to watch the appearance of the aforesaid matter. The result was, that those white globular particles were animalculæ, for in a few days they became quite visible to the naked eye in the form of worms or maggots. The cuts that had been steeped never showed the slightest appearance of any such thing; and they retained their solidity and firmness when the other ten cuts were completely decayed and rotted. Still unwilling to believe without further proof, he tried the experiment five or six times, and planted them, distinctly

marking a division between those cuts which were steeped and those that were not. The consequence was, the almost total failure of one kind and the complete success of the others placed the question beyond the possibility of a doubt. He considers that the air has a powerful effect on the potato, and may sometimes impregnate it with this destructive matter.

Spayed Cows.

[FROM THE NEW-ENGLAND FARMER.]

Mr. Fessenden,—Some years since, I passed a summer at Natchez and put up at the hotel then kept by Mr. Thomas Winn. During the time that I was there, I noticed two remarkably fine cows, which were kept constantly in the stable, the servant who had charge of the horses, feeding them regularly three times a day, with *green Guinea grass* cut with a sickle.

These cows had so often attracted my attention, on account of the great beauty of their form and deep red colour, the large size of their bags and the high condition in which they were kept, that I was at length induced to ask Mr. Winn, to what breed of cattle they belonged, and his reason for keeping them constantly in the stable, in preference to allowing them to run in the pasture, where they could enjoy the benefit of air and exercise, and at the same time crop their own food and thereby save the labour and trouble of feeding them? Mr. Winn, in reply to these inquiries, stated, that the two cows which I so much admired, were of the common stock of the country, and he believed of *Spanish origin*—but that they were *both spayed cows* and that they had given milk, either two or three years. Considering this a phenomenon (if not in nature, at least in art,) I made further inquiries of Mr. Winn, who politely entered into a very interesting detail, communicating facts, which were as extraordinary, as they were novel to me, and supposing that they will prove equally as interesting to your numerous agricultural readers, as they were to me, I am induced, on the request of a friend, to offer them for publication in your very valuable journal, in the hope, that some of the farmers who supply our large towns with milk, will deem them of sufficient importance, to make experiments for the purpose of ascertaining whether the results which they may obtain, will corroborate the facts stated by Mr. Winn, and which, should they be fully confirmed, may lead to great and important benefits, not only to farmers, but to tavern-keepers and other inhabitants of cities, and villages who now keep cows, in order that they may be sure of a constant supply of *pure* and *unadulterated* milk.

Mr. Winn, by way of preface, observed, that he had in former years been the habit of reading the English Magazines which contained accounts of the ploughing matches which were annually held in some of the southern counties of England, performed by cattle, and that he had noticed that the prizes were generally adjudged to the ploughmen, who worked with *spayed heifers*—and although there was no connexion between that subject and the facts which he should state, it was nevertheless, the cause which first directed his mind into that train of thought and reasoning, which finally induced him to make the experiments which resulted in the discovery of the facts which he detailed, and which I will narrate as accurately as my memory will enable me to do it, after the lapse of more than twenty years.

Mr. Winn's frequent reflections, had (he said) led him to believe—"that if the cows were spayed soon after calving and while in a full flow of milk, they would continue to give milk for many years, without intermission or any diminution of quantity, except what would be caused by a change from green to dry or less succulent food."

To test this hypothesis, Mr. Winn caused a very good cow, then in full milk, to be spayed; the operation was performed about one month after the cow had produced her third calf; it was not attended with any severe pain, or much, or long continued fever; the cow was apparently well in a few days and very soon yielded her usual quantity of milk and continued to give milk freely, for several years, without any intermission, or any diminution in quantity, except when the feed was scarce and dry—but a full flow of milk, always returned, upon the return of a full supply of green food. This cow ran in the Mississippi low grounds or swamp, near to Natchez, got cast in deep mire and was found dead. Upon her death, Mr. Winn caused a second cow to be spayed, the operation was entirely successful, the cow gave milk constantly for several years—but in jumping a fence, stuck a stake in her bag, that inflicted a severe wound, which obliged Mr. Winn to kill her. Upon this second loss, Mr. Winn had two other cows spayed, and to prevent the recurrence of injuries from similar causes with those which had occasioned him the loss of the two first spayed cows, he resolved to keep them always in the stable, or some safe inclosure and to supply them regularly with green food, which that climate, throughout the greater part, if not all the year, enabled him to procure.

The result in regard to the two last spayed cows, was, as in the case of the two first, entirely satisfactory, and fully established, as Mr. Winn believed, the fact, that the spaying of cows, while in full milk, will cause them to continue to give milk during the residue of their lives, or until prevented by old age.

When I saw the two last spayed cows, it was, I believe, during the third year that they had constantly given milk, after they were spayed.

The character of Mr. Winn, (now deceased) was highly respectable, and the most entire confidence could be reposed in the fidelity of his statements, and as regarded the facts which he communicated in relation to the several cows which he had spayed, numerous persons with whom I became acquainted, fully confirmed his statements.

At the time to which I allude, I endeavoured to persuade Mr. Winn to communicate the foregoing facts to the late Judge Peters, then president of the Agricultural Society of Pennsylvania. But he was restrained from complying with my request by an extreme unwillingness to appear before the public, and peradventure, his discovery might prove not to be new, as doubts in regard to the facts, might, where he was unknown, subject him to some degree of ridicule.

The many and great advantages that would result to the community, from the possession of a stock of cows, that would be constant milkers, are too obvious, to require an enumeratien.

Should gentlemen be induced from this communication, to make experiments, they will find it better to spay cows which have had several calves, rather than heifers, as at that age their bags are usually large and well formed, and are capable of carrying a much greater quantity of milk (without pain and inconvenience,) than younger animals.

VIATOR.

On the Spaying of Cows, and its effect upon the secretion of Milk.

[FROM THE FARMER'S REGISTER.]

A private letter from a farmer in Goochland contains the following inquiry and remarks:

To the Editor of the Farmers' Register.

"I wish to make to make an inquiry of your correspondents, through the Register. It is, whether any one can say with certainty, how long a cow, *spayed* when she is in full perfection, and giving the greatest quantity of milk, will continue to give milk in full quantity, if properly attended to?

"Next to the stock enclosing system, (which the repeal of the present law of enclosures would cause,) the above fact, if it be (as I have been told,) a fact, that cows will continue to give milk plentifully as long as they live, would be of the greatest importance to the poor people. They would not then have to wait, every year, for a half starved cow to have a calf, before their children could get a supply of milk to keep them from suffering for suitable food. They would have a supply for years, and that from an animal easily kept, as spayed animals always are. Small as this thing may seem to be to those who abound in the good things of this life, it is an important matter to be established as regards the poor—and middle classes too."

While joining with our correspondent in the request that others will state whatever facts they may know on this subject, we will offer such information as we are possessed of, and which, though not derived from personal experience, appears to be as well authenticated.

The only publication which we have ever met with on the spaying of milch cows, is contained in a late French periodical—though it is there stated that the advantage of this operation was first discovered by a Mr. Winn of our own country:* and no other facts than his had been previously made known, nor are any given by the French writer, except the few repetitions of the experiments in Switzerland, the report of which we will present below. It is singular that so little should be known of the operation in the country in which it originated. It is not stated from what American publication the knowledge of Mr. Winn's practice was learned, and we have to confess our entire ignorance as to the source of information, as well as of the person mentioned.

Before proceeding to give the translation of the French article, we will state a fact within our knowledge, that the spaying of milch cows was practised on the farm of a deceased friend, John Edmunds of Sussex; and that when we saw the cows and were informed by him of the facts, he was perfectly satisfied with his success, and entertained no doubt of the cows continuing to yield milk without diminution, so long as they were properly kept, and properly milked. The only doubt seems to be whether the secretion of milk will continue through the healthy life of the animal, or only for a time unusually long compared to that of breeding cows—say for several years. We were then struck with the obvious advantages of having a few permanent milkers, which with care and attention would yield regularly as much milk as thrice their number in the ordinary way—and at the sametime getting rid of all the trouble of the continual changes of cows, and fluctuations (natural and artificial) of their yield of milk. The want of any person

* See article on this subject in preceding page.

capable of performing the operation with facility and safety prevented our making the experiment. By the way—it appears below that the art of castrating domestic animals is thought in Europe not beneath the attention of government—and that able veterinary surgeons are employed to give courses of instruction to the common operators. So long as such operations are performed here by ignorant negroes, or others but little better informed, there would be greatly increased hazard of death, or of injury to cows in spaying, but there can be no doubt that if proper knowledge and skill are used, that the operation is easily performed, and perfectly safe. It is scarcely necessary to observe that spaying will not serve its intended purpose, if the cows afterwards are as badly treated and milked after the usual manner of lower Virginia—that is, to take from the cow a little less milk every week, if not every day, until she "goes dry." Our milk maids consider this to be the regular order of things; and it would be very difficult to convince them of the possibility of "flying in the face of nature," and of their established usage, by spaying cows.

Without any view of the milking qualities, this operation has been used by some of the old "good livers" of lower Virginia, on heifers, for the purpose of making superior beef.

We proceed to give the article entire.

Translated for the Farmers' Register, from the *Recueil de medicine veterinaire practique*. February, 1834.

Mr. Winn, a proprietor in North America, has been the first to report that he has spayed cows, and preserved during many years the quantity of milk which they gave at the time of the operation. The action of the udder neither being injured by the function of gestation, nor by the animal being in heat, it may be conceived that the secretion of the milk may continue. Many proprietors, especially those who are situated near great cities, where the high price of milk makes it unprofitable to raise calves, would derive great advantage from keeping cows whose milk would not dry up.

But the observations of Mr. Winn were not numerous, and besides he has not indicated what method of spaying he used for his animals. We need new observations and more precise details. M. Levrat, a distinguished veterinary surgeon of Lausanne, from whom many communications have been inserted in the *Récueil de médicine vetérinaire*, reports his manner of performing this operation on the cow, and the physiological results which he has remarked after two cases. The number of facts still needs to be increased: they ought also to be observed longer, before a decided opinion is formed of the dangers and consequences of the operation. However, the notice which M. Levrat has inserted in the *Journal des Connoissances utiles* will doubtless be interesting to our readers. We give in the author's words:

"In May, 1832, I was entrusted by the government of the Canton de Vaud, with the direction of a course of instructions for the country operators in the art of castration. The opportunity to repeat the experiments made in America on spaying cows, was too favourable to be missed. I performed the operation of extracting the ovaries of a cow, which was intended to be sacrificed to illustrate the course of instruction. This cow not giving milk, my object could not be completely attained. Nevertheless, it was no small gain to have studied the manual part of this operation, and to have assured myself of its pathological effect, in order to be able, on the one hand, to practice

this operation with assurance, and on the other, to inspire with more confidence the owners of cows who might be willing to make the trial. My attempt was quite successful. The cow operated on did not seem to be made sick by it: during the two days which followed the operation she appeared rather drooping [*un peu triste;*] but by the third day she was as lively as before, and returned to her usual habits.

"The object then was to perform the operation on cows that were in the condition indicated by Mr. Winn, that is to say, a month after their second or third calving.

"M. Francillon Michaud, to whom I gave information of this discovery, was desirous of submitting one of his cows to the experiment. This cow, six years old, then had her third calf. The preceding years she had given, soon after her calving eight quarts [*pots*]* of milk, and six quarts at a later period. This cow was operated upon, June 23d, 1833, thirty-eight days after calving. The consequent sickness was but slight: only it was observed that during the two days which followed the operation she had less appetite: her milk was lessened four quarts—but the third day she recovered her appetite, her liveliness, and returned to her previous quantity of milk. During the whole summer she continued to give about nine quarts; and since the supply of green food has ceased, and she has been kept on dry forage, she has kept at seven quarts—while the preceding years, as before stated, she gave [under like circumstances] but six quarts.

"Encouraged by this first success, M. Francillon requested me to make a second trial. For this he choose an old cow, that yielded milk abundantly, in order to form a judgment of this operation upon aged cows. This one was twelve years old, and had produced twin calves on the 17th of October, and had sustained injury in giving them birth. She had yielded, in preceding years, on an average, eight quarts of milk. She was spayed on November 18th, thirty-three days after calving. She gave at that time twelve quarts of milk. After the operation she lost three quarts: but it is proper to state that this cow has a discharge of matter from the womb, and that she neither eats nor digests as usual, and that it will be otherwise when she is in good health.†

"The authors of the article upon the spaying of the cow have not directed the manual part of the operation; yet it is so much the more important to know, as the ovaries vary in their position, according to the species. I do not know that any author has given the necessary directions. Daubenton has spoken of the manner of spaying ewes, and after him, Fromage of Feugre: but the practice on the ewe is not applicable to the cow: it is therefore that I am going to describe the mode of operation which I have tried, and found successful.

"The operation should be performed at from 30 to 38 days after the calving, upon a cow that has had her second or third calf, because that is the period at which a cow yields the most milk, and after which

* This measure *(pot)* is equal to two French pints; but still may be different from two American pints, as rendered above. No mistake in this respect, however, will affect the comparison of quantities yielded before and after the operations.—*Ed. F. R.*

† It may be supposed that the time of year, and consequent diminution of green and juicy food, also had some effect in keeping down the quantity milk in this case.—*Ed. F. R.*

it may be enjoyed for a long time. There is no precaution necessary, save that of not permitting the cow to have a full meal the preceding evening, and to operate in the morning before she eats again. The things required for the most convenient mode of practice, are, some cords, a plank or bar of wood, two surgical knives [bistouris,] the one convex on the edge; the other straight, and with a guard on the point [boutonne]—two needles bent for stitching, with stout twisted thread, well waxed, two pegs of dry wood, eight inches long and of the diameter of about a quarter or third of an inch.

"*Manner of fixing the cow.*—To be enabled to operate in perfect security, it is necessary to fix the animal suitably. To this end she is placed against a wall, the left side turned towards the operator. This wall ought to have three buckles fixed to strong rings. One of these rings is for the cord that confines the head; the other two should be placed lower, one at the level of the lower part of the right shoulder; the other at the point of the knee bone—or an assistant may hold the cord to produce the intended confinement. The head is fixed by the cord being tied; or otherwise held by a strong assistant. Then the plank or bar is placed obliquely under the udder, forward of the posterior members—and is held by an assistant to protect the operator from the feet of the cow. The tail is also held, or it may be tied to the rope which passes round the animal, to prevent the blows from it which might be received (if unconfined) when the operator introduces his arm into the abdomen.

"For want of a wall, provided with rings and buckles, use may be made of a strong paling, a solid gate or fence, or even of trees standing at suitable distance, to which is fixed a large wooden bar.

"The animal being securely fixed, the operator armed with the knife with the convex edge, which he holds in his right hand, places himself near the left shoulder of the cow, the left hand applied to her back: this hand gives a point of support to lean on, if made necessary by the unruly movements of the animal; and this support gives more steadiness to the right hand. He carries the edge of the knife to the middle (and a little nearer the upper part) of the left flank, and with a single stroke, he cuts vertically through the skin and the muscles of this part.

"The flank having thus been opened to the *peritonæum*, [the membrane which envelopes the bowels,] the operator enlarges the incision with the guarded knife, so as to be able to pass his arm. He introduces his hand into the abdomen, directing it against the cavity, behind the bottom [*cul-de-sac*] of the paunch, where are found the horns of the uterus. As soon as he meets with this organ, where the ovaries are situated, between the thin bands [or membranes] of the ligaments suspending the uterus, he seizes one of the ovaries, which he detaches from its posterior part with the thumb and fore-finger; he passes this over the convexity of the ovary, to separte it completely from the peritonæal ligament, which sustains it: then he seizes the ovary in his hand, draws it gently, and by means of the thumb nail, he scrapes the vessels and the fallopian tube upon the fore finger, which presents a point of support under these vessels. Finally, he breaks the cord, which is the object in view, by gently drawing it, as he makes it undergo the scraping with the nail, and the ovary is brought out. He then again introduces the hand into the abdomen, and proceeds in like manner to extract the other ovary. Then the wound is closed by stitches secured with the wooden pegs, taking care not to close entirely

the lower part, in order not to hinder the discharge of the matter, which, without this precaution, would spread between the skin and the muscles, and within the abdomen, and might cause ill effects which are avoided by favouring its passage out.

"The ovaries may also be drawn out of the opening made in the flank, and then detached with the ends of the fingers: but this mode may be attended with inconveniences. Besides, it is not more expeditious than the course I have directed, because it often happens that the ovary escapes from the hand, and that the operator has again to introduce his arm to search for it.

"Two or three days after the operation, the wound must be dressed. For the dressing it is only necessary to foment twice a day all around the wound with lukewarm mallows—to keep it clean, and in warm weather to inject in the wound the water of Labarraque. Every time of dressing the wound, the aperture should be covered with a little tow placed between the two pegs, to prevent any dirt getting in, and which is secured with thread in its place. The wound being properly dressed twice a day, will cure of itself in fifteen days, or at most three weeks.

"It is seen from what has been stated above, that the effect of spaying is not merely as has been said, to keep the milk producing faculties at the height at which they were before the operation, but rather at a height *above the previous degree of those faculties;* which, without contradiction, is an important advantage, and especially if it is true that this faculty is preserved during many years.

The wounds of the cows of M. Francillon on which I operated, were dressed by his servant—and thus it ought to be managed, to avoid the expense of having the dressings attended to by a veterinary surgeon. For if this practice should spread, it is necessary to make it cheap, that it may occasion as little expense, and render as great advantages to proprietors as possible, and such as I hope they will derive."

On Native Silk.

[FROM THE SILK CULTURIST.]

The forests of Mississippi abound with the native mulberry, and silk worms are found growing spontaneously upon them. Cocoons have been found upon the mulberry, the linn and the cane. An extraordinary one was found a few years since by a negro on a black mulberry tree. It was about the size of a hen's egg and had a husk on the outside, in all respects similar to that which immediately inclosed the worm. Between the husks the silk was extremely loose. Cocoons found on the cane are of a diminutive size; but those on the linn are sometimes larger than those on the mulberry. The mulberry is mostly of the black and red species; but there are many of them white. It is estimated that four-fifths of the forest mulberry are barren.

PART III.

MISCELLANEOUS INTELLIGENCE.

HORTICULTURAL SOCIETY.

The anniversary of this Society was celebrated on the 8th July. An Address, suited to the occasion, and which we hope soon to present to our readers, was delivered by Dr. LEITNER, of the Society, to a numerous company of Ladies and Gentlemen, assembled in the Long-room at Seyle's, which was decorated as usual with Flowers, ornamental Plants and Fruits. The Annual Report, which follows, was read by Dr. JOHNSON, acting as Chairman of the Standing Committee; and after the distribution of the Medals to successful candidates by the President, Mr. HEYWARD, the Society retired and elected the following Officers:

NATHANIEL HEYWARD, *President.*
JOEL R. POINSETT, *Vice-President.*
DR. E. HORLBECK. *Corresponding Secretary.*
JOSEPH F. O'HEAR, *Recording Secretary.*
JAMES LEGARE, *Treasurer.*
JOEL R. POINSETT, *Orator.*

Standing Committee.—Rev. Dr. Bachman, C. J. Colcock, Dr. Samuel Wilson, J. D. Legare, Dr. Joseph Johnson, Joseph A. Winthrop, and J. Michel.

To the Horticultural Society of Charleston:—

The Standing Committee beg leave to Report, that in the absence of their highly valued Chairman, they are subjected to much difficulty in making awards on several subjects, in which he possessed the most general and correct information.

The severity of the last winter was unparalleled, destroying not only all the fine productions of the kitchen-garden, but many of the Evergreens hitherto flourishing, the pride and ornament of every shrubbery. Many of the finest Exotics usually cultivated in conservatories, were also totally destroyed: all were more or less injured. The Olea Fragrans and Laurus Nobilis, even the Prunus Caroliniana, and long-remembered Myrtles were killed to their roots, many of them were altogether lost. Hardly a Geranium was saved, and in the general loss, the rational enjoyments of the tasteful amateur, and the well founded calculations of the professional cultivator, were alike blasted. In their wreck, the interests and objects of this Society suffered greatly.

The loss to Mrs. Schriber, was relatively very great; she had good reason to anticipate a handsome remuneration, for the care and pains bestowed on her Nursery, but these prospects were almost entirely blasted: may her enterprise in promptly obtaining a new and elegant supply, meet its just reward with a liberal public. She exhibits elegant specimens of Erythrinas, Bignonias, double scarlet Lych-

nis, Fuchsias, Gloxinias, Passiflora Elata, and many others. The effects on the declining health of Mr. Noisette, one of our distinguished members, were truly lamentable. Devoted as he always had been to his nursery and botanical pursuits, with health enfeebled, his mind became depressed in contemplating his misfortunes, and the life of this valuable man was consequently lost.

Mr. S. Patterson and Mrs. Judge Johnson lost the whole of their tasty collection of Exotics, while Messrs. Michel, Bennett, Nicholson and Lucas, were more successful. The garden of Mr. John Michel is in a very high state of cultivation, evincing the genius, industry and enterprise of the proprietor. Although it appears to be crowded, it is in conformity to his method, to protect his fine trees and many other plants, from the scorching heat of our climate, making the most hardy to shelter the rest, and keep down the grass by excluding the sun from the earth. By this and other means, he has succeeded, with his fine Fruit Trees and Strawberries, beyond any one known to your Committee in this State. He has several varieties of the finest Grapes and other Plums which could be imported; the finest Cherries and Pippins ever seen by your Committee, among the products of the State; which fruits were all exhibited at the different periods of their maturity: his Peaches and Grapes were also fine. In Mr. Michel's garden there was a fine show of Roses. His red Moss Roses were in the most luxuriant bloom, he having multiplied them to a great extent by innoculation. His Camellias were very beautiful. In his garden there were some fine Pæonies, and an Agapanthus Umbelletus in fine flower. There were, likewise, Heliotropium Peruvianum, Volkameria Fragrans, and a good collection of West-India Plants. His Coffee Tree and red leaved Banana, deserve a notice. As Mr. Michel is about to devote himself to gardening, and to keeping a Nursery, for the propagation and sale of choice Fruit Trees and Ornamental Plants, your Committee hope that these sources of gratification will become more generally diffused and enjoyed by this community. Mr. Howard well known as the skilful gardener of Mr. Bennett and Mr. Lucas, having also established a Nursery for the same objects, it is hoped that a commendable rivalry for distinction and patronage in conducting such establisments, will secure to both the rewards of merit, and advance the taste for gardening. The Committee likewise commend with pleasure the skill, diligence and success of Mr. Tobin, in conducting the gardens of Dr. North, Mr. Nicholson and Mr. D. C. Webb, hoping that he also will feel encouraged to undertake some similar establishment.

In Mr. F. R. Nazer's garden were exhibited a very fine display of Poppies, Rocket-Larkspurs, and some very beautiful Dahlias.

The handsome garden of Mr. Bennett is evidently conducted by female taste and skill. In it is found, in addition to a very extensive collection of all the usual ornaments of a garden, a greater variety of elegant Roses, and a greater number of scarce Exotics than were seen

elsewhere. Among them we notice the Ficus Australis, F. Elastica, F. Populnea, F. Bengalensis, and F. Hebertia; Thunbergia Grandiflora, several varieties of Pittosporum, four species of Erythrina, among which are the Corallodendron and Crista-galli; several Bignonias, and among them B. Salicifolia, a fine shrub blossoming there for the first time in Charleston. The Mimulus Moschatus was also there, blooming modestly, but pre-eminent for its extraordinary perfume.

Your Committee recommend that experiments be made to improve the fragrance of Roses and Geraniums from this elegant little Plant. The seedlings of next year would probably give evidence of their parents while blooming, having been in its neighbourhood. His Pæonies were of elegant varieties, and some of the tree kind with the colour and odour of Roses. The pretty Verbena Metantheris, almost constantly in bloom, covered with spangles its humble bed. Several varieties of Agapanthus, among them the Umbellatus were in blossom. But it would be tedious to particularize. Mr. Lucas' fine garden was remarkable for one of the largest and oldest single Camellias in the United States, likewise for the well dressed Hedge-rows of Arbor Vitæ, the first it is believed ever planted, at least in this State. He had also a fine collection of the Green-house Plants of a vigorous healthy appearance, in addition to the usual varieties of elegant flowering shrubs and Plants. The beautiful gardens of Mrs. Wagner, Mrs. Davis, Mrs. Cochran, and Miss Merchant, have suffered in common with others, but in such hands there can be no doubt of their speedy revival. In Mr. James Legare's garden, there was a fine display of white Moss Roses, twelve or fourteen trees blooming in great perfection, and in addition to the usual plants of a tasty garden, were many elegant Pæonies and Camellias.

At the gardens of Mrs. Bentham and Mrs. Boylston, were many varieties of elegant Plants, among them Tulips vieing with those of Mr. Nicholson.

The fine garden of Mr. Bachman is embellished by female taste, and conducted by skill in botany. To the usual ornamental Plants of such collections, are added many native flowering Shrubs and roots of our own State, which has itself been descriptively called a botanic garden. Aided by the ladies of his family, this will probably become the favourite resort for scientific visitors. Among others was seen the Cantua Coronopifolia, flowering there, a valuable addition to our stock of annuals, introduced by him from the upper part of this State and Georgia. Mr. Nicholson has spared neither trouble or expense in his extensive collection of rare and beautiful Plants, and there is every probability of his garden assuming in the course of the next year, a higher character in the arrangements and methods, by which the different parts will appear in the most advantageous light. His Tulips, Hyacinths and Dahlias, were certainly the finest in quality, and greatest in quantity that had been seen by your Committee.

The Committee have, no doubt, that many fine fruits, vegetable and flowers, may have come to perfection unseen by them, and be highly deserving of praise. It is, therefore, hoped, that all interested in gardening, will hereafter be more particular in giving notice to future Committees, of every thing deemed worthy of notice.

Your Committee recommend that the following Premiums be awarded:

To Mr. James Nicholson, for the finest show of Tulips, - - - A Silver Medal.
" Likewise for the finest show of Hyacinths, - - - - - - - - A Medal.
Likewise for the greatest variety of fine Dahlias, - - - - - - A Medal.
To Mr. Thomas Bennett, for the greatest and finest variety of Roses, A Medal.
" Likewise for the most beautiful choice flowering new Exotic Plants, - - - - - - - - - - - - - - - - - - A Medal.
Likewise for the best Dahlias, *Seedlings*, - - - - - - - - A Medal.
To the Rev. Mr. J. Bachman, for the introduction of the most beautiful flowering indigenous cultivated Plant, - - - - - A Medal.
To Mr. J. Michel, for the best Exotic Plums, - - - - - - - - A Medal.
" Likewise for the best Cherries, - - - - - - - - - - - A Medal.
" Likewise for the best Strawberries, - - - - - - - - - - A Medal.
" Likewise for the best Artichokes, - - - - - - - - - - - A Medal.
To Mr. Robert Landreth, for the best Peaches, - - - - - - - - A Medal.
To Mr. Henry Horlbeck, for the best Apricots, - - - - - - - - A Medal.
To the Hon. C. J. Colcock, for best Musk Melon, - - - - - - - A Medal.
To Mrs. Schriber, for the finest Carnations, - - - - - - - - - A Medal.
To Mr. James Legare, for the best Salsafy, - - - - - - - - - A Medal.
" Likewise for the best Carrots, - - - - - - - - - - - - A Medal.
" Likewise for the best Leeks, - - - - - - - - - - - - - A Medal.

Numerous fine specimens of Flowers, Fruits and Vegetables were exhibited, but mostly in quantities not sufficient for the medals, and without an inclination to claim them.

Dr. F. Y. Porcher sent fine clear stone Peaches.

Mr. T. Bennett a West-India Squash, weighing 61½lbs. measuring 48 inches in circumference, and 20 inches in length.

Mr. Michel exhibited 50 fine red Pippins, measuring 10⅞ inches round, as fine Apples as ever grew in this State. Likewise fine blue Grapes, Apricots, and early Mignion Peaches.

Mr. Parkerson likewise exhibited Grapes, fully equal to those of Mr. Michel, but neither of them intitled to a medal.

Mr. P. Noisett, a fine Musk Melon, weighing 29lbs. and Dr. E. Horlbeck, a tree in fine order, of well flavoured Apricots, but small, called the Algerine Apricot.

Mr. Peter Guillemen, specimens of Tomatoes, uncommonly fine; and Mr. Gustavus Guynemer, other specimens of Tomatoes, not inferior to these, weighing 16½oz. Respectfully submitted by

JOSEPH JOHNSON,
C. J. COLCOCK,
E. HORLBECK.

Charleston, July 8th, 1835.

REVIEWS OF PERIODICALS.

The American Gardener's Magazine, Boston, July, 1835.—Article first is a continuation of a survey of the principal public and private Gardens, near Boston, New-York, and Philadelphia. Many recent numbers of this periodical have derived attraction from this survey. The result seems to be that Gardens are more numerous near Boston, more extensive near Philadelphia, and more like establishments of trade in New-York. In the vicinity of Boston, the Gar-

den of Col. Perkins is furnished with a conservatory six hundred feet in length—heat is maintained in it by pipes, through which steam is made to circulate, after plans of the distinguished mechanic of the same name, now resident in England. Some formidable accidents have happened by the bursting of these pipes, which make them in our view clearly inferior to the new mode of heating conservatories by the circulation of hot water in troughs. We shall hereafter, perhaps, find room for a sketch of the arrangement of troughs and pipes, by which this end is effected. In one of the Gardens near Boston, a steam engine is used to throw water into a tank, and from this it is distributed over the Garden. The disadvantages of climate and situation, are conquered with an unsparing expense, and the *environs* of Boston are the pride of the place.

The taste for Horticulture among the Philadelphians, has induced the multiplication of public nurseries; there the Landreth's possess an extensive and valuable collection, inferior to none in this country. And Buist's skill in the propagation of plants, with his *very moderate prices*, induce us to recommend him to the attention of the Southern Amateurs. In New-York, Mr. Floy & Sons exhibit the most extensive shew of Camellias known among us—they have originated seedling varieties of great beauty, and are celebrated for their skill in propagating this family of plants.

One of the latest Books of travels in the United States, is from the pen of a practical Farmer and Gardener, apparently a candid judge, and whose prejudices are on our side. Yet he speaks of the *art* as almost unknown among us, even Dr. Hosack's Hydepark, which has earned encomiums from Europeans who were mere travellers, offends his fastidious skill. What would he say to the enclosures we call Gardens? Nature is bountiful enough to us, why should we intermeddle with her, laissez faire; one would think is our settled maxim here.

Wilmot's Scarlet Rhubarb is recommended by the conductors of the Magazine, and we find in a recent English periodical, the same variety preferred.

This number contains a select list of ornamental trees and shrubs, with the prices affixed—we cannot copy this, but will be glad to shew it to any of our friends.

New-York Farmer and American Gardener's Magazine, for July, 1835.—The important topic, of the selection of seeds, opens this number, examples are quoted to shew that the successive selection of seed from choice plants grown in the same situation, is to be preferred to any benefit which changes of seed from distant localities can produce. We in the South practice on the opposite system very extensively; the planters of Bayou Bœuf grow cotton seed from Mexico, and furnish seed to the planters of Petit Gulf; these in their turn supply Louisiana, Mississippi, and Alabama, and from them our Petit Gulf cotton seed comes—gradual changes take place in its character here, and the genuine variety is kept up by annual importations.

It is not to be doubted that instances occur of remarkable improvement, both in the quality and quantity of our rice crops upon the use of North-Carolina seed rice. And it has been the settled habit of our rice planters from the commencement of that culture on our River Swamps, to draw their supplies of seed from the Inland Swamps, this shews a deep conviction of the advantage derived from change of seed.

On the other hand, Mr. Gibbes, of Chester District, in this State, grows Corn known there as the three eared Corn, which his neighbours buy for its prolific tendency, this he obtained by selecting stalks having three ears; and every body knows that of late our Sea Island planters have been zealous in the selection of fine samples from their crops for seed; so far was this intent examination carried in one instance, that the long use of magnifying glasses, to aid in selecting the finest fibre, threatened blindness to one gentleman of John's Island, as we are told, he is rewarded by sending to market a "fancy brand."

Silk growing, and the cultivation of the Mulberry, occupy a conspicuous portion of this number, and seem to be the prevailing topics now; notices of the Morus

Multicaulis especially, abound in all the farming Districts of the United States—it is disputed whether the seed will produce its like, and those inclined to propagate, had better do so by cuttings, until it is ascertained; this species is said to produce fruit very soon after being planted.

A machine for felling trees, by a saw fixed in a portable frame, and worked by a crank is given, and may be worth the inspection of those engaged in cutting live oak for ship timber—we shall be glad to exhibit it.

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Ruffin's Farmer's Register, Virginia, 1835.—An Account of some pattern farms in France, translated for the Register, includes a particular description of the economy of *La Grange.* In our judgment, such accounts are calculated to instruct more than any other kind of Agricultural reading.

Upon the choice of sheep in Virginia and in New-York, much difference of opinion is now expressed. Merinos are condemned, their fine fleeces cover carcasses unprofitable for the shambles—their ewes prove bad nurses, and the whole stock unthrifty. The Saxony are complained of, but the controversy seems still open.

No doubt exists of the value of the South Downs, where it is the object to grow that quality of wool.

We will enter with keener interest into these questions, when our husbandry connects more familiarly the herding of sheep with full growth of cotton. Our salt pastures are capable of supplying with delicate mutton the place of Kentucky beef to us, who live in the city, *if our* country friends would use them. The spaying of heifers is minutely described in two articles of this number, and the advantages of the practice insisted upon—we confess an aversion to this Malthusian economy; but publish them for the information of our subscribers.

The mass of interesting materials which presses upon our attention in this voluminous Magazine, would carry us too far, and we must bring our notice abruptly to a conclusion.

MONTHLY CALENDAR

FOR AUGUST.

VEGETABLE GARDEN.

Bush and Snap Beans—May be sown about the beginning of this month; the ground in which they are to be reared, should be in an open situation moderately manured and the surface made even; as in general with us this season rains are frequent, they should be planted on ridges or small flat beds, a foot broad on the top, and six inches high, in these ridges or beds, drills of two inches deep should be drawn, in which the beans should be planted and covered. Should the weather be dry at the time you commence planting, soak the beans in soft water for six or eight hours; any of the dwarf kind may be planted at this season. Those which were planted in the last month should be hoed frequently, and earth drawn up around the stems of those that have reached three or four inches in height.

Peas.—These may be sowed in the beginning or middle of this month, for this purpose, the Charlton being an early sort, is the best, as they will be fit for use before the winter sets in. The ground should be selected in an open situation, and drawn up into flat ridges about 4 feet apart, should the weather incline to be wet; if the ground be dry soak the peas in soft water for ten hours previous to sowing.

Cabbages.—Early York, Sugar Loaf, and Savoy Cabbage seed may be sown any time in this month; the early ones will head the latter end of November. The ground in which these seed are to be sown, must be rich, and in an open situation,

and should be divided in beds of three feet and a half wide, with broad alleys at least six inches deep, so that the ground in wet weather might be kept as dry as possible; the seed must not be sown too thick, must be thinly covered with earth, and if you can furnish them with shade by means of bushes or otherwise, it will not only aid the seed in their germination, but the plants after they are up.

Cabbage Plants of the large kind that are fit to be put out, may now be removed to their station. The ground to receive them should be thus prepared; after it is manured, well dug up and spread even, the surface should be laid out in rows of two feet or a little more, according to your space; the earth should then be drawn with a hoe in ridges or small beds 6 inches high and a foot broad on the top; on these rows or beds, the plants should be set about two feet apart. If the weather is dry they should be watered every evening until rooted.

Savoy Cabbages are treated in the same manner, excepting, that they are planted twenty inches from each other in the rows. The plants will head in November and December, and will supply the table until January.

Cauliflowers and Brocoli should be planted in an open spot, on which well rotted manure has been spread and dug in, the rows should be two and a half or three feet asunder, and the plants placed at nearly the same distance in the rows.—Those plants that were set out in the last month, should be hoed frequently, and the earth drawn up to their stalks. The same plan set forth in the last month, in relation to these vegetables, may be pursued in this.

Carrots.—These may be sowed any time in this month. The directions of the last month will apply to this.

Onions.—The first crop of these may be sown thick the latter part of this month, and transplanted in October or November.

Spinach.—The best season for a certain crop is to sow the seed towards the middle, or near the latter end of this month, but not longer. In the last month we gave general directions for the preparation of the ground, &c. The round seeded sort is the best kind to be sown now, as it not so hardy as the other.

Celery may still be transplanted. The trenches must be prepared as directed in the last month. The tops and leaves of the plant must be cut off, and the ends of the roots trimmed; each trench must contain one row, 5 or 6 inches from each other; in dry weather they should be frequently and liberally watered.

Endive.—That which was sown in the last month may now be transplanted. The ground should be manured and in an open situation; it should be well dug, and the surface raked even, and divided into beds about 5 feet wide; four rows of the largest plants should be set out on each bed. In dry weather they should be watered every evening. If the space between your celery is unoccupied, it would be a thriving situation for Endive.

Lettuces.—These may be still sown to succeed those of the last month. The seed should be sown pretty thick in low ground, and watered every evening until they come up.

Radishes.—More of these may be sown. The best kinds for this season, are *Salmon*, *Short top* and *Turnip*. The bed in which they are to be shown, ought to be 3 or 4 feet wide. They should not be sown thick; they should be watered until they come up, and two or three times a week afterwards, unless the weather proves wet.

Turnips.—Any of these species may be sown in the early part of this month for autumn and winter use. Those that were sown the last month will now require hoeing. This work must not be delayed; and requires peculiar delicacy in the operation, in order to avoid injury to the young plants. Hoes must be made for this special purpose; their width for the early sorts must be 6 inches wide, and from 9 to 8 for the later. The edges of those tools must be so sharp as to cut out the young plants the width of the tool used, and to leave the strongest plants 6 or 7 inches from each other, and the larger kinds from 9 inches to a foot. The object of this is to promote the growth of the plants, and to destroy the weeds that are

constantly springing up between them. This work should be done every fortnight, for the purpose of keeping the earth loose between them.

Potatoes may be planted this month for winter use. The ground should be manured and raked out in rows of two and a half feet a part, and drawn up 10 inches broad on the top. In the middle of these rows plant the sets about 10 or 12 inches from each other, they ought to be planted with the cut part downwards; a dibble may be used, or drills of the proper depth made with a hoe.

Small Salading may still be sowed as directed in the last month.

FRUIT GARDEN.

In this Department there is not much to be done as to the perfecting the fruit, the fate of which is already decided. Peaches have been abundant this year, but have fallen short in the quality which their luxuriance for the two last months seemed to promise. The *Curculio* appears to have been unusually busy, for situations and trees that have never been known before to have suffered from their attacks, have had their fruits, this season, rendered almost worthless.

The bark of the trees should be now washed with soft soap and water frequently, so as to keep it in a clean and healthy state; all dead leaves and branches should be removed. Should gum appear at the foot of the tree, you may calculate surely that the grub is busy, and it becomes you to remove him with all possible despatch; clean out the gum, remove the dead bark, and place around it a quart or two of ashes.

This is now the season for budding, which is a matter so practical in its nature, that although a simple inspection will teach us the *modus operandi*, it is almost impossible to derive it from description; we shall, therefore, not attempt any.

Agricultural Society.—At a meeting of this Society, held on Tuesday, the 21st July, the following Preamble and Resolutions, offered by Dr. Benjamin Huger, were adopted:

To repine and murmer at the dispensations of an all-wise God, would ill-become those who believe in his mercy and goodness, but to lament when we are afflicted, and to grieve for the loss of those whom we loved most, must always be an acceptable offering at the throne of the Almighty.

Since our last meeting in this room, the hand of the destroying angel has been amongst us; the victim has not only been selected, but the arrow has accomplished its fell purpose, and we are left to mourn the untimely death of one, endeared to us all by ties of good feeling and affection. Need I point to the place hitherto occupied by our late Secretary, and now vacant? Need I remind you of his zeal and energy, and devotion to the interests of this Society? The proof of all this exists on our records. Need I dwell upon his many virtues, the excellencies of his heart, or the integrity of his character? These are indelibly impressed upon our recollections, and will be more lasting than monumental marble. Age had made so little progress, infirmity so little inroad upon the constitution of our friend, that we had reason to anticipate for him, a long life, devoted to the improvement of our science, and the benefit of our country. In the midst of his activity and usefulness, it has pleased Him who called us from the dust, to consign him to his parent earth. But in the death of our friend, we are not left without many sources of consolation. The purity of his conduct was proverbial, his energy and usefulness was undiminished, his entire belief in all, which through life he had held sacred, was unshaken in death; he has disappeared, without leaving a spot for blemish upon his name, which friendship or affection would wish to obliterate; and he has left us a bright example, that although deeply engaged in the business of time, he had not neglected the more important concerns of eternity.

Therefore, be it *Resolved*, That the Agricultural Society of South-Carolina, deeply lament the loss they have sustained in the death of their late Secretary CHARLES ELLIOTT ROWAND.

Resolved, That as a feeble testimony of respect for his memory, and regret for his loss, we will wear crape on the left arm for thirty days.

Resolved, That the President of this Society be requested to write a letter to the family of the deceased, enclosing our proceedings, expressing our condolense on this melancholy occasion.

On motion of Mr. Ashby, *Resolved*, That the Preamble and Resolutions just adopted, be entered on the Minutes of this Society, and that they be also published.

JOSEPH F. O'HEAR, Recording Secretary.